

ESSAYS ON ECONOMICS & POLITICAL ECONOMY

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INTRODUCTION: ECONOMICS & POLITICAL ECONOMY

The fields of economics and political economy are deeply engaged in contemporary debates about the interplay between markets, states, and societies. Issues range from the origins and effects of inequality to those of climate change and globalization, with current discussion concerned with how political forces shape economic outcomes and vice versa.

The political economy has always regarded the exciting entanglement of markets, states, and societies at its hub. The turning points in economics and the very centrality of the issues of political economy to the making of policies provide sufficient incentive to revisit these old questions about the right mix between markets, states, and communities. The waning authority of the welfare state, the historic opening up of markets around the world due to declining transport and communications costs, the questioning of the efficacy of the developmental state, and the upsurge in the appeal of ethnic and religious movements have centered attention globally back on the public restructuring of global economic and social institutions.

The complex interplay among markets, states, and societies has always been at the center of political economy. Important developments in economics and the fact that political economy issues occupy a central place in policy making provide sufficient impetus to return to these age-old questions about the right mix between markets, states, and communities. The erosion of the authority of the welfare state, the unprecedented opening up of markets across the globe through

falling transport and communication costs, the questioning of the efficacy of the developmental state, and the resurgence of ethnic and religious movements have shifted global attention back towards the restructuring of global economic and social institutions.

Classical economics offers an abstract scheme for talking about connectedness of markets. State institutions, if they entered the argument, were seen to be constraining each other, and the interest of the monarch was conceived to be opposed to that of society as a whole. In contrast, classical political economy went into what today would seem to many an excessive institutional particularity with respect to the interest of landowners in survival. Keynes's General Theory gave some plausible explanation of the economist's usual ingratitude towards the historian who has shown little concern for the pragmatically minded statesman but merely exacerbated the confusion between very particular monetary and fiscal policies in certain episodes and the general fiscal capabilities of the state.

Contemporary debates in economics and political economy seem to proceed under the overarching and perhaps somewhat obvious recognition that market activities represent social activities. That is, market models, to the extent to which they are intended to describe actual markets, are social models. This insight is obviously uncontested. What is more, however, is to some extent at least a matter of perspective and level of abstraction. Very commonly, economists will restrict their model to market behavior, on the assumption that the social aspects and characteristics that also inform those relations are either unchanging or of little relevance for the purposes of the investigation at hand. To be sure, the latter qualification is a crucial one - economists often ask questions that are all but social, simply by choice of the appropriate cordon sanitaire that shorts out the social aspects of the market relations at the outset.

Essays on Economics and Political Economy offers a glimpse into the diverse debates emerging from the dynamic interplay of economics and political economy. While the articles address contemporary issues and events, the underlying themes at the heart of each discussion are rooted in more enduring and timeless questions. True, be it an economist, an interested researcher, or a student researching for a larger plane, this book inspires serious critical debates about some of the most important questions of our time.

Certainly, here's a concise summary of these chapters:

In the first chapter Oflaz and Koç study the causes of income inequality in a historical context. Researchers state that it is necessary to elaborate the concept of income by referring to the field of politics and sociology. They make explanations in a way to cover the history of humanity, the history of civilization and the methods of exchange. The article will examine the process until the end of the industrial revolution to examine the foundations of the problem, ignoring the main debates of our time.

In the second chapter Güney and Yıldız investigate the effects of high increases in housing prices. They examine the relationships between housing prices, CO2 emissions, and crime rate in Colombia for 1990-2020, which had problems with housing prices and carbon emissions, with path analysis and the ARDL model. They show that there is a long-run relationship between variables.

In the third chapter Dursun and Dikmen examine the unemployment convergence across eight South American countries from 1982 to 2022 utilizing a non-linear panel analysis framework. Their analysis employs a two-regime threshold autoregressive (TAR) model, where the panel series exhibits unit root characteristics. First, they conduct a linearity test, followed by a threshold autoregressive panel unit root test to evaluate the stationarity of the series. The analysis reject the null hypothesis of linearity in the first stage. Subsequently, Chile was identified as the transition country between the two regimes. Finally, the findings confirm the presence of convergence in both regimes.

In the fourth chapter Demirel discusses the market structure and competition level of the wood and wood products industry for the period of 2012-2023 using concentration indices (CR₄, CR₈, HHI, HTI, RI, CCI, EI). The findings reveal that market concentration in the sector decreased between 2012 and 2018 but showed an upward trend in the post-2018 period. The findings also reveal that, in 2021, market concentration reached its peak, leading to a decline in competition. The author claims that the increase in concentration indicates that the influence of large firms in the market has grown, while the competitive power of smaller firms has diminished.

In the fifth chapter Puwanendram and Şimşek study the opportunities, challenges, and strategies to promote Sri Lanka as a better destination for economic sustainable development. The authors obtain data from semi-structured interviews conducted with industry-wide stakeholders. The study's outcomes point to six broad, but distinct themes; namely, 1) Market Dynamics, 2) Attractions and Preferences, 3) Barriers and Challenges, 4) Economic Potential, 5) Sustainable and Ethical Practices, and 6) Role of Digital Innovation. They show that despite the temptation that both cultural and natural attractions provide to Muslim travellers, Sri Lanka, however, lacks competitive edges in the developing MFT market owing to infrastructural and promotional inadequacies.

In the sixth chapter Önder, Aytekin, Akın, Hatırlı, Çağatay and Demirel analyze the market power of cucumber product for the production area market and consumption area market, and consumption area market and consumption area retail supply chains. The study was conducted using monthly data sets from October to June, which is the 2014-2022 greenhouse production period. The Vector Error Correction Model (VECM) was used to analyze the market power of the Istanbul hal - Istanbul retail supply chain, while the Lag Distributed Autoregressive Model (ARDL) was used to analyze the market power of other supply chains. They show that the validity and adequacy assumptions that the market operates under perfect competition conditions are not met in all supply chains of cucumber products. Hence, they claim that the establishment of branches for a certain area/region width and taking measures to regulate the number of branches within a certain distance will limit price increases.

In the seventh chapter Denктаş analyses the dynamics of democratization through a dual framework of supply and demand. The author shows that the supply of democracy is determined by the composition and stability of the power bloc—comprising the bourgeoisie, capital elites, and emerging political alliances—while the demand for democracy is shaped by the working class and Lipsetian modernization factors, such as urbanization, industrialization, and the quality of economic development. By comparing the post-1980 democratic trajectories of South Korea, Turkey, and Brazil, the study highlights how variations in power bloc configurations and socio-economic demands influence democratic consolidation and fragility.

In the eighth chapter De Casas and Garcia aim to denounce the violent nature of journalistic work in the state of Zacatecas, Mexico. They claim that journalists, like most of the workers in the capitalist system, must face the condition of exploitation and extermination whose goal is the accumulation of capital. According to the study, journalists' condition of being a vigilant institution in the system dependent on the state policy condemns them to expressions of violence.

In the ninth chapter Erden studies and criticizes the existing perspective using a critical-Marxian political economy, and deals with and discusses on the political, economic and ideological aspects of the AKP and its Islamism together by focusing on the term politicization of Islam in Turkey.

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PART **I**
ECONOMICS, MARKET DYNAMICS
AND UNEMPLOYMENT

1

CAUSES OF INCOME INEQUALITY AND THE LOGISTIC FUNCTION OF THE INDIVIDUAL

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Abstract

The aim of this article is to explain the causes of income inequality in a historical context. It is considered necessary to elaborate the concept of income by referring to the field of politics and sociology. Explanations will be made in a way to cover the history of humanity, the history of civilization and the methods of exchange. The article will examine the process until the end of the industrial revolution to examine the foundations of the problem, ignoring the main debates of our time.

Keywords: *Economic History, Labor, Consumption, Development, Conflict.*

Jel Codes: *N30, N20, O23, D740.*

1. Introduction

Since patriarchal societies, exchange procedures and sharing theories have, in general terms, examined the source of wealth and labor-capital relations. The problem of governance between the individual and authority has raised the question of how surplus value is to be shared. Understanding the root of the problem is necessary to solve the problem. In this way, the emergence of new policy proposals indicates an ongoing development. In contemporary societies, the welfare of the individual on the basis of rights and freedoms is the primary concern of the political institution. In democratic societies, however, there is

often no direct correlation between the existence of pressure and interest groups and the wishes of society.

State, politics, society and economic classes are parties to a conflict process. Due to the natural process of conflict, conflict continues as long as interest groups do not reach their satisfaction levels. Today, the process continues in its natural course and new levels of conflict emerge as a result. The basic questions are “What should be the value of labor?” and “What are the limits of the individual in the supply of labor?”. The contribution of the individual's working life and income to his/her happiness is at the center of the conflict.

2. Income Sharing in the Context of Exchange from the Agricultural Revolution to the End of the Mercantilist Period

The history of economic thought examines the production-centered conflict area on the basis of the problem of sharing. The main questions in conflict analysis are who produces, how it is produced and for whom it is produced. Since hunter-gathering, there is a need for organization and distribution of tasks. People who became communities established patriarchal communities and developed tribal culture. In these early political relations created by human beings on the way to becoming a society; heroic cult and belief systems and classes with administrative privileges emerged (Seligman, 1995, p: 96). Ensuring administrative legitimacy established a method of exchange between the community and its rulers. “Gifting” and ‘bestowing’ were the first exchange procedures between the ruling class and the community. The ruling class, which has the responsibility to protect and watch over the people, is commanding. Since the power is in a single will, its decisions and methods cannot be discussed (Weber, 2015, p:54).

The agricultural revolution brought a new sociological change. Settled communities faced new problems in the process of urbanization and the first laws emerged on the road to socialization. The legal status that came with laws made barter, a new form of exchange in human civilization, possible. The new social structure becomes more complex and more difficult to manage. As the state retreated to its natural boundaries of protection and law-making, structures emerged in the economic sphere that were not directly subject to the state. In the new situation, income sources such as taxation and extortion provided the

financing of the state, while conflicts between the enriching structures and the state became inevitable (Gramsci, 2011, p:47).

It is observed that the political structures of the early world included both gift and barter in terms of exchange procedures. Europe's mercantilist period gave rise to a rising commercial class. The mutual relationship of the society, which had a patron/client relationship with the aristocracy, with the bourgeois class developed on the axis of Supply/Demand. Labor supply was subject to mutual consent instead of a certain hierarchy. In the new period, the return for labor is also evaluated within the scope of the supply/demand relationship. The supply of labor has brought along important conflicts such as wages and working conditions. The starting point of the conflict is that labor demanding institutions and companies want to employ the working class under minimum conditions. The conflict area of the new situation has become the legal statuses dealt with within the scope of labor contracts. This conflict, which continues in our age, is actually both a struggle for rights and a legal development process.

The accumulation of wealth and the rise of the bourgeoisie, the representative of the wealthy class, basically followed a parallel sociological process (Braudel, 2015, p:27). In the early modern period, mercantilism is the first phase to be addressed. Mercantilism, most prominently, treats wealth as the accumulation of precious metals (Heckscher, 2013, p: 13). The accumulation of precious metals is related to foreign trade balances. The main goal is to accumulate precious metals by selling more than the products purchased from abroad. In the Mercantilist period, when wealth was valued and even sacralized, the state was at the center of economic activities. It intervened in the economy with instruments such as taxes, incentives and trade monopolies (Viner, 2016, p:4-7).

Mercantilism is a system that also encourages colonialism. In this respect, it is referred to in the literature as the commercial capitalist period. Colonies were treated as raw materials and labor and functioned as markets for processed products (Magnusson, 2015, p:19).

The two-way trade relationship produced the early policies of the world system, which is referred to as the process of uneven development. While the capitalist mode of production grew rapidly, especially in developed regions such as Western Europe and North America, this growth was limited in peripheral regions such

as Asia, Africa and Latin America. This difference has functioned as a mechanism that has shaped not only economic but also social and political structures. Robert Gilpin argues that the process of globalization has accelerated economic growth in developed regions while reinforcing inequalities in developing regions (Gilpin, 2015, p. 47).

The uneven development model focuses on the center-periphery relationship. According to this understanding, the center refers to developed, industrialized and rich regions. The periphery, on the other hand, refers to regions that are economically dependent on these centers, are more backward and usually sell their natural resources. This relationship has been further analyzed within the framework of Immanuel Wallerstein's world-system theory. Wallerstein argues that the capitalist economic structure creates more poverty and inequality by excluding peripheral regions while consolidating wealth in the central regions (Wallerstein, 2011, p. 35).

From a liberal perspective, Mercantilism can be analyzed from Adam Smith's 'Wealth of Nations' (1776). He heavily criticized mercantilism for its protectionist structure in which the state was an actor. Smith argued that economic growth could be achieved through production and consumption, not through the accumulation of precious metals. He also stated that mercantilist policies prevented free trade in the long run and led to inefficient use of resources (Smith, 2005, pp. 580-585). As an interpretation of mercantilism from a liberal perspective, Smith does not see mercantilism only as an economic policy. According to Smith, Mercantilism is a ground of economic thought (Heckscher, 1936, p: 45).

Although mercantilism is not practiced today, its effects are felt in areas such as economic nationalism, protectionism and industrial policies. Mercantilism is an important turning point in economic history. It has been the focus of criticism that has revealed the importance of free trade. Today, the principles on which global trade is based are fed by the debates that mercantilism opened (Heckscher, 2013, p:21-23). Criticism of the period, which has quite distinctive features as an economic view, also reflects a conjunctural perspective. The argument we will put forward as a justification for this argument is the problem of capital accumulation. Undoubtedly, capital accumulation is the process of development

of the main elements that reveal the production mechanisms of the capitalist period (Şiriner & Aydın, 2021; Cipolla, 2021, p:61).

Since the agricultural revolution, the main element of income sharing has been labor. The labor that meets the energy needs of agricultural production and the remuneration of labor is the early story of humanity transitioning from community to society. The hierarchy and division of labor within society brought the exchange system into a new era, including commodity-commodity and money-commodity systems. Increasing prosperity triggered population growth, and with the increase in the world population and the globalization of the maritime trade network, the market problem was relatively overcome. The process inevitably created the infrastructure for more and uninterrupted production. The development process underlying the industrial revolution has a mercantilist memory (Heckscher, 2013, p: 113).

Since the nature of mercantilism was to accumulate wealth, it classified income inequality within society. The entrepreneurial class of the new era also demands a social status. This social class, which is one of the main actors of socialist theories and the focus of critical approaches, is conceptualized as the capital class. This new class, which acquires capital and does not have to be aristocratic in origin, has become a target that every individual can be a part of. The logic of freedom of enterprise and the “blessing” of the enriched individual at the basis of liberal theories should be analyzed from this point.

In the market system created under the premise that wealth is attainable, the threat is the intervention of non-market actors in the market. For this reason, “laissez faire” was used as a code and interventionist state policies were criticized. In fact, the fact that the social stratum, which acquires wealth through protectionist mercantilist policy sets, excludes the state as an actor is a good definition of the reason for its own existence. Instead of the state creating new riches, one can observe a desire to create a cycle in the domestic market in the manner of Galtung's world system theory. The desire for an unequal social development is naturally reflected in the systems in which states are actors in global markets.

In a system where every individual is equal and has freedom of enterprise, the factor that is ignored is the current position of wealth accumulation. The fact

that the class holding the wealth and the class trying to meet the basic needs of its family have the same freedom of enterprise cannot be fair on the basis of the idea (Bauman, 2017, p:31-32). It can be argued that class boundaries pose difficult obstacles to overcome due to unfair starting point and factor access. The impossibility of class transitions in a period when capital accumulation and wealth were evaluated by agricultural output is a phenomenon that should be recognized. For this reason, piracy and banditry were accepted by the masses as a rebellion against the status quo. Ironically, it is also argued that the legal basis was designed by the bureaucracy and the bourgeoisie. For this reason, theories praising lawlessness and opposing the state have been developed.

The arbitrary use of democracy and the legitimacy of government by powerful classes became more pronounced in the pre-industrial revolution period. In this period, also classified as the age of emperors, lineage composition and legal accountability clashed. The development of rights and freedoms in systems ruled by oligarchy and monarchy is an almost impossible option. It is argued that modern rights and freedoms can exist in constitutional monarchies. From a historical perspective, it is an undeniable reality that systems of governance (power) are biased on the grounds of class conflict. For this reason, on the basis of the industrial revolution and the increasing interdependence between classes, the “age of empire” ended and the “age of revolutions” began with a series of revolts and rebellions.

3. Income Inequality in the Context of Industrial Revolution and Classification Process

The globalization of the world is mainly related to navigation and storage technologies. The development of maritime transportation is an important process in terms of the concept of distance. The market mechanism, which has evolved from local to global markets, has not changed radically, but has expanded with new paradigms. For this reason, it is generally accepted in the literature that the market mechanism encompasses capitalism (Gilpin, 2015, p:30). In the case of capitalism, it is therefore partially acceptable to abstractly address the internal conflict of production mechanisms.

If the balance in power involves risks, mutual sacrifices are made between rulers and the people, and this diplomatic level creates legal and/or constitutional orders

(Comte, 2019, p:178-181). In the capitalist era, the noble class did not have clear social legitimacy. Therefore, there have been acquisitions achieved as a result of claims and social conflicts. Weber calls this concept political institutional functioning (Politischer Anstaltsbetrieb). He argues that the institutional structure maintains order by using legitimate rights granted by law (Weber, 1978, pp 207-214). On the basis of this evaluation, it should be considered that the struggle for rights continues. Because the ground for conflict has not disappeared.

In a system based on the right to life, the right to a fair trial, the idea that human beings have fundamental rights and freedoms by virtue of being human all emerged in the same period. What is actually attainable is wealth. There is no need for privilege to attain wealth. Being an entrepreneur is not a dependent position. Wealth, on the other hand, refers to a capital tied to land due to the dominant understanding of the period. The main change of the industrial revolution is the partial end of this paradigm. The change in the factors of production was conceptualized by mainstream economists dominated by liberal thought. The enriched market actors are liberated on the basis of this idea.

John Stuart Mill, in his work *On Liberty*, argues that the tendency of the people to see it in their own interest for rulers to come to power through elections as beneficial for the people to come to power through elections is a fundamental mistake with the statement “At some point in the history of mankind, however, men ceased to think that it was a necessity of nature that their rulers should be an independent force against their own interests” (Mill 2011, p:20). The relationship between the mechanisms of production and consumption and power is of decisive importance. Although the people have the power to elect, it is a ruling elite class that is elected. The political class that receives the privilege of power governs the state, and it is the state structure that has the right to use legitimate violence to restrict freedoms. The cost of the choices made by the state for the individual is his/her freedom. Every law enacted expands the public sphere. In this respect, while legal regulations inherently define security policies, they also reveal the codes of daily life. This proposition is also valid on the basis of economic relations. Therefore, the creation of a citizen type suitable for the functioning of the market has been considered a necessity by the capitalist class.

Although the main interest in the industrial revolution was production, the mechanisms of production and the problem of the market must also be analyzed.

The emergence of the accumulation of individual possessions is an extrapolation of human nature. It is the rediscovery of the “Ego Consumas”, the consuming ego that has always been inherent in human nature (Baudrillard, 2021, p:101). Creating the consumer of the system, defined by Baudrillard as “the logistical function of the individual”, is analyzed in our article. In the relationship between power and the capitalist system, consumers with high ego have a fundamental functional role. Therefore, an unequal enrichment model emerges due to the nature of the market concept.

The concept of value is surrounded by the concept of intrinsic value. Therefore, the accumulating consumer is obliged to supply his/her labor. As the individual's welfare increases, he/she gives up working. On the basis of the philosophy of the ancient Greek philosopher Diogenes, there is a perception of liberation by giving up. Freedom is based on a relationship with accumulation. Working extra, staying in the production mechanisms is indispensable for the structure of the system. The role of the individual is determined as purchasing and he/she has to work as the cost of buying. Since purchasing behavior means that capital also makes a profit, the individual who saves enriches capital. The idea that addresses the cause of income inequality on the basis of individual behavior rather, refers to the wage selectivity of the individual who supplies his labor (Zengin & Altındağ, 2013, p:255).

The working class, which rose with the industrial revolution, is in a more important position than it was during the agricultural revolution. The main reason for this is to keep the machines operational. This new position, which requires technical knowledge, changed the direction of bargaining in favor of the worker (Cunningham, 1882, 616). The response of the capital class to the new situation was Fordism. Fordism is basically more than just a business relationship. It constitutes a life style (SAKLI, 2007, p: 5). Although the wage policy was above the market level, the wage obtained was also turned into a new borrowing instrument. By providing the working class with a financial solution to buy a car, it was guaranteed that the borrowing workers would continue to work.

Modern man, in search of prosperity and happiness, voluntarily becomes a part of the system. The capital class, which is sure that the individual will remain in the system through the accumulation of commodities, enriches itself by both providing financing and ensuring the continuation of consumption. The fact that

money is only a medium of exchange and that there is no need to secure as much money as possible has further increased capital accumulation through investments (Magnusson, 2015, p:77).

The underlying reason for the belief that savings will turn into investments is that the monetary system is conceived as a medium of exchange. The continuation of the need to accumulate is the main starting point that led to the digital revolution of the modern world. The concept of “choice cost”, one of the basic propositions of economics, is the basic assumption that the capital class makes about the choices of households. For example, a person trying to survive in a desert is offered a glass of water or a highly valuable diamond. The desire to survive is the most dominant desire. Although it is argued to infer that the choice cost of a glass of water would be the diamond, in fact, the choice cost of a glass of water is the end of life itself. Under these circumstances, even though the person seems to have the right to choose, if he or she does not choose water, there is no possibility of survival. On the way to becoming rich, one faces the risk of losing his/her life. Thus, the proposition that preferences depend on conditions can be used to explain the concept of value (Ofiaz, 2024, p: 33).

“Liberation by renunciation” appears as a romantic proposition, in line with the lifestyle of the ancient Greek philosopher Diogenes. The argument of liberation by giving up, which contains a similar deficiency to the proposition of collective production-equal sharing at the basis of socialist thought, contradicts human nature in practice. Systems that analyze human nature consider satisfying pleasure by buying as rational behavior.

4. Conclusion

In the pursuit of wealth, people become part of the system and enrich the capital class. From this point of view, income inequality needs a definition that is in line with both the basic assumption of the argument put forward from the liberal point of view and the socialist proposition. Class distinctions have emerged in the natural course of history. Since the early industrial era, there has been a conflict between the productive capital class and the working class who supply their labor.

The conflict seems to have reached equilibrium in our age on the basis of the concept of value individualism in accordance with human nature. The individual, who evaluates purchasing on the basis of pleasure, becomes a property owner through borrowing. The capital class, which holds the production and finance structure in its hands, becomes even richer without any market problems. As the individual buys, capitalist makes a profit. As capitalist produces, the individual is employed. Since the process starts from an unequal starting point, wealth continues to be unequally distributed.

All values that serve the advertising, communication and consumption society have created a social structure. The social structure has been created on the basis that human beings are hedonistic. Man, who is the cause of inequality, is basically motivated by pleasure, no matter which class of the conflict he represents. What is given up for pleasure is not saving. The capital class, which enriched in the early ecosystems, makes the choice to save more and make investments in this way as a source of pleasure. In the process where choices are rational, the conflict becomes static. Static and partially consensual positions reduce the intensity of conflict. The main actor of the processes conceptualized as welfare society and working society is the consuming human being.

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2

DO HOUSING PRICES AFFECT CRIME THROUGH CO²?

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Abstract

High increases in housing prices can cause problems, especially in developing economies. Some studies, although few, suggest that it affects the crime rate. On the other hand, severe increases in carbon emissions are a problem that threatens all countries and, according to some studies, affects the crime rate. This study examined the relationships between housing prices, CO₂ emissions, and crime rate in Colombia for 1990-2020, which had problems with housing prices and carbon emissions, with path analysis and the ARDL model. Empirical findings show that there is a long-run relationship between variables. Additionally, when the CO₂ variable is considered as a mediating variable, housing prices have an increasing effect on the crime rate. The control variables used in the analysis are GDP, population rate, and immigration rate.

Keywords: Crime, housing prices, CO₂, path analysis, ARDL
Jel Codes: K14, O18, R32, S52, S54

1. Introduction

It is difficult to define and explain the concept of crime. Although various definitions have been made, a clear definition of crime can be made together with different disciplines (Özdemir & Öner-Özkan, 2017). However, in the most general definition, crime can be defined as behavior against the laws of society (Mohamadi et al., 2014). This concept, which has existed throughout

human history, is an important phenomenon that affects not only the individual but also the society and even the rules determined by the laws of the society. With these historical origins, the concept of crime maintains its importance in terms of disciplines today (Özdemir & Öner-Özkan, 2017).

Crime has been examined throughout history, tried to be explained by various theories, and handled differently in different periods. Although crime could not be explained rationally at the beginning, it was approached rationally by showing a change in the metaphysical phase, and it was evaluated as a situation in which people who commit crimes calculate the cost of crime and decide in line with the benefit (Mohamadi et al., 2014; Adi & Onyebuchi, 2020). Crime is not concerned with the factors influencing human behavior in this approach. The positivist approach classifies people as normal or abnormal and focuses on biological, psychological, and social factors to understand the differences between criminals and ordinary individuals. Modern theories emphasize social factors to explain crime, while critical theories examine the role of society. Postmodern theories relate crime to mental processes, language, and structuring. (Mohamadi et al., 2014).

Research from different disciplines on the definition and explanation of crime shows that crime is related to biological, psychological, sociological, and environmental factors. The theories put forward in the 1900s and tried to explain crime economically are frequently discussed. Firstly, Fleisher (1966), followed by Becker (1968) and Ehrlich (1973), published various studies under the title of the economics of crime. Afterward, crime was explained using different macro variables. Population, migration, and per capita income especially attract attention. Although crime is tried to be presented by empirical studies, new theories are put forward every day, and it is suggested that different factors can explain crime.

Recent theories that air pollution may affect crime continue to be investigated. Although this relationship has not yet been fully explained, there are various findings that air pollution indirectly affects crime rates. In particular, more than one disease can occur in people exposed to air pollution for a long time shows how serious the situation is. As a matter of fact, studies have shown that air pollution has a significant effect on human psychology and may even lead to suicide (Lu, 2020; Szyszkowicz et al., 2010).

In later studies, it was found that those exposed to polluted air lead to aggressive and depressive behaviors caused by a decrease in serotonin levels (Yokota et al., 2016; Casas et al., 2017). In addition, it has been stated that the brain cannot get enough oxygen due to air pollution. This situation affects people's behavior and increases acts of violence in people (Cruz et al., 2022).

Behaviourally, air pollution triggers avoidance behavior, defense spending, and migration as coping strategies (Lu, 2020). Air pollution can be both the cause and the result of many adverse situations, not only human behavior.

The leading causes of air pollution are energy demand (Paramati et al., 2022), population growth (Northrup & Klaer, 2014; Tang et al., 2021), and increased industrialization and urbanization (Liu & Bae, 2018). The leading causes of air pollution are shown in Figure 1.

Figure 1. Leading causes of air pollution.



Source: Created by the author from google images.

Urbanization leads to problems in developing cities. Social inequality, stress caused by urbanization (Andrade et al., 2012), increasing population (Tandon & Jyotsna, 2016), increasing crime (Cabrera-Barona et al., 2019), poverty, rural-urban inequality (Liddle, 2017), increasing housing demands-increasing housing supply and rising housing prices with irregular migration (Lin et al., 2018; Wang et al., 2018). Increasing housing prices change the purchasing intentions of low- or middle-income households and increase consumption in the current period (Dai, 2019).

It has been stated that urbanization significantly impacts crime and that even high housing prices and the characteristics of buildings encourage some crimes (Han & Zhu, 2021). This view is closely related to Merton's "Tension Theory." According to Merton, the tendency towards crime stems from a social structure and occurs when individuals do not have access to equal opportunities. In capitalist societies, individuals have three main goals. These are to have a promising career, high income, and property. However, with unequal opportunities, it may be challenging to achieve the existing goals, which may cause tension in society and encourage individuals to commit crimes. Merton emphasized that for these situations, an improvement in the housing costs of people experiencing homelessness and the incomes of individuals could be made or that regulation of home ownership systems would significantly contribute to these problems (Merton, 1973; Merton, 1968).

The existence of a relationship between crime and house prices has been examined in the past (Congdon-Hohman, 2013). However, the existence of the effect of house prices on crime, which has only recently been empirically tested in both national and international literature, was first examined in China in 2019 (Song et al., 2019). Later, it was stated that the existing relationship should be emphasised (Song and Hao, 2022).

In this study, population density, net migration rate, per capita income, air pollution and house price variables were included by taking inference from the studies examining the factors affecting crime (Kathena and Sheefeni, 2017; Amin and Ahmad, 2018; Solivetti, 2017; Cruz et al., 2022; Song and Hao, 2022). According to the author's information, the selected independent variables affect air pollution separately and the air pollution variable is included in the model as a mediating variable. From this point of view, not only the crime variable is considered economically, but also sociodemographic variables are included in the model to obtain more comprehensive and satisfactory results

The study is analysed for the years 1990-2020 for Colombia, one of the countries with the highest crime rate. There are many reasons why Colombia tops the list of countries with the highest crime rate. In particular, the impact of the civil wars that have been going on in the country for nearly half a century on the high crime rate in the country is an undeniable fact. Looking at the time period covered by the study, it is seen that it covers the war years and the peace process as a result

of the agreement made in 2016. Although a peace agreement was reached in 2016, the effects of the long-standing war in the country continue for the exposed people (Bernal et al., 2024). Along with these existing effects, the study will try to examine the effects of the insecure region, destroyed houses, possible price increases in houses, rebuilt houses and environmental pollution that may arise with reconstruction on crime. Accordingly, the study consists of several stages. In the next section, after the literature review, the dataset and the model are introduced, and in the last section, discussion and conclusion are given.

2. Literature Review

This section summarizes studies on the relationship between crime and economic growth, C02, housing prices, population, and migration in separate tables.

Table 1: Crime and Economic Growth

Author(s)	Countries	Period	Methods	Results
Güvercin (2019)	21 European countries	1996-2014	Panel Granger causality tests	Crime \rightarrow GDP
Paul et al. (2018)	South Africa	2004–2013	GAM	Mix. Result
Hazra (2020)	India	2010- 2016	Regression Analysis	Mixed Results
Amin And Ahmad (2018)	Pakistan	1970–2015	ARDL Model	Negative Relationship
Mughal Et Al., (2023)	South Asian Countries	2000-2021	FMOLS and DOLS	Negative Relationship
Mavi (2014)	India	2001-2009	Ordinary Least Squares Regression Model	Mixed Results
Northrup and Klaer, (2014).	ABD	2003-2011	(Single, Multivariable, Restricted, Multivariable)	Positive Relationship
Debnath and Das (2017)	India	1982-2013	ARDL	Long-run Run Positive Relationship, short-run Negative Relationship
Mulok et al. (2016)	Malaysia	1980 to 2013	ARDL	Long-run Positive Relationship, short-run Crime \rightarrow GDP
Kizilgol and Selim (2017)	EU 28 and Turkey	2001-2010	Fixed Effects Negative Binomial Model	Positive Relationship

Table 1 presents the studies analyzing GDP growth within the framework of crime. When the results of these studies are examined, it is generally found that the relationship between economic growth and crime is multidirectional. This situation does not reveal the existence of a clear relationship.

Table 2. Population (number, density) and crime

Author(S)	Countries	Period	Methods	Results
Northrup and Klaer, (2014).	ABD	2003-2011	Multivariable Regression Model	Positive Relationship
Haider and Ali (2015)	Pakistan	2010-2011	Ordinary Least Squares (OLS)	Mixed Results
Kizilgol and Selim (2017)	EU 28 and Turkey	2001-2010	Fixed Effects Negative Binomial Model	Positive Relationship (urban overpopulation)
Anwar et al. (2017)	Pakistan	1973-2014	Autoregressive Distributed Lag Model Approach	Mixed Result
Hipp And Roussel (2013)	USA	2000	Negative Binominal Regression	Mixed Result
Battin and Crowl (2017)	USA	2000-2010	Regression models	Mixed Result
Lu et al. (2018)	USA	2001-2009	Fixed-effects regression models	Poisson Positive Relationship
Wadsworth (2010)	USA	1990-2000	OLS Regression	Positive Relationship
Harries (2006)	USA	2000	Bivariate correlations	Low but positive impact
Chang et al., (2018)	USA	1995-2010	Superlinear Relationship	Positive Relationship
Cabrera-Barona et al. (2019)	Republic of Ecuador	2012	Ordinary least squares, geographically weighted regressions	Mixed Result
Kelly (2000)	USA	1981-1991	Logistic regression	Mixed Result

The findings summarized in Table 2 are derived from studies investigating the impact of population on crime. Accordingly, some of the studies focus on the number of population, while others focus on population density. When the findings are evaluated in general, it is stated that population significantly affects crime, and it is inferred that this effect may differ according to crime types.

Table 3. Migration and Crime

Author(S)	Countries	Period	Methods	Results
Ousey and Kubrin (2009)	USA	1980-2000	Fixed Effects (Within-City)	Negative Relationship
Wadsworth (2010)	USA	1990-2000	Linear Regression Model	Mixed Result
Desmond and Kubrin (2009)	USA	Survey (1995-1996)	OLS Regression	Mixed Result
Bianchi et al.,(2012)	Italy	1990-2003	Ordered Logistic Regression OLS	Mixed Result
Alonso-Borrego et al. (2011)	Spain	1999-2009	OLS, within-group estimates, and GMM)	Mixed Result
Piopiunik And Ruhose, (2017)	Germany	2003-2006	Baseline Model Cross-Sectional Time-Series	Positive Relationship
Solivetti (2017)	Italian	1995-2005	Models	Mixed Results
Bell et al., (2011)	U.K.	2002-2009	Panel Regressions	Little Effect
Odabaşı (2021)	USA	2012-2015	Fixed Effect Approach	Mixed Result
Cheng et al. (2017)	China	1990-2012	OLS robust regression or the FWLS regression methods and Spatial regression analysis	Mixed Result

In addition to domestic migration from rural to urban areas, the increasing number of wars in the world brings along foreign migration. While there is a general acceptance that migration increases crime in past theories, empirical findings support this view very little. The different results in this existing literature vary by country and year range. When Table 3 is analyzed, this

relationship has not been demonstrated even with the empirical findings in the past periods. This study is expected to contribute positively to the literature addressing the migration factor, which is thought to explain crime as a determinant.

Table 4. Crime and CO2

Author(s)	Countries	Period	Methods	Results
Güvercin (2019)	21 European countries	1996-2014	Panel Granger causality tests	CO2 → Crime
Bondy et al. (2020)	London	2004-2005	Panel Fixed Effects Model	Positive Relationship
Lu et al. (2018)	USA	2001-2009	Fixed-effects regression models	Positive Relationship
Herrnstadt et al. (2021)	Chicago	2001-2012	OLS regression	Mixed Result
Cruz et al. (2022)	USA	2015	Multilevel analysis	Mixed Result
Heyes and Saberian (2015)	USA	2005-2013	OLS and IV estimation	Mixed Result
Burkhardt et al. (2019)	USA	2006-2013	Negative binomial and OLS	Positive Relationship
Chen and Li (2020)	USA	1998-2008	IV estimates	Mixed Result
Herrnstadt et al. (2016)	Chicago and Los Angeles	Two different times (2001-2010/2005-2013)	Cross-sectional/panel regression	Positive Relationship
Reyes (2007)	USA	(1992-2002)	Sensitivity Analysis	Mixed Result
Sluchevskaya and Kulikova (2022)	Russia	2010'-2020	Statistical and comparative research methods	Mixed Result

Increasing pollution in the world has been discussed since the past as the cause of many negative situations ranging from human health to climate change. The concept of green criminology, which has only recently begun to appear empirically in the literature, is entering our lives. In this context, the effect of air pollution on crime has been investigated, and significant findings have been obtained. When Table 4 is analyzed, it is determined that air pollution has a significant effect, but this effect differs according to crime type.

Table 5. Crime and Housing Price

Author(s)	Countries	Period	Methods	Results
Song et al. (2019)	China	2004-2014	Static and Dynamic Panel Models	Positive correlation
Song and Hao (2022).	China	2004-2017	Fixed effect model, mediating effect model, Spatial Dubin model	Positive Relationship

Crime, as old as human history, is tried to be explained with various theories and factors. Whether the increasing population, especially with urbanization, affects crime has only recently been investigated. Cheng et al. (2017) in the study, it has been stated that immigrants trying to live in places with air pollution tend to commit crimes according to their home ownership status. When Table 5 is analyzed, it is seen that the relationship between house price and crime, which has only recently been investigated empirically, needs more evidence. On the other hand, this study will reveal the relationship between air pollution and crime for Colombia and provide new empirical evidence for this existing relationship.

3. Method

3.1. Data Set

This analysis explores the dynamic interplay among crime, housing prices, and CO2 emissions in Colombia, drawing upon annual data from 1990 to 2020.

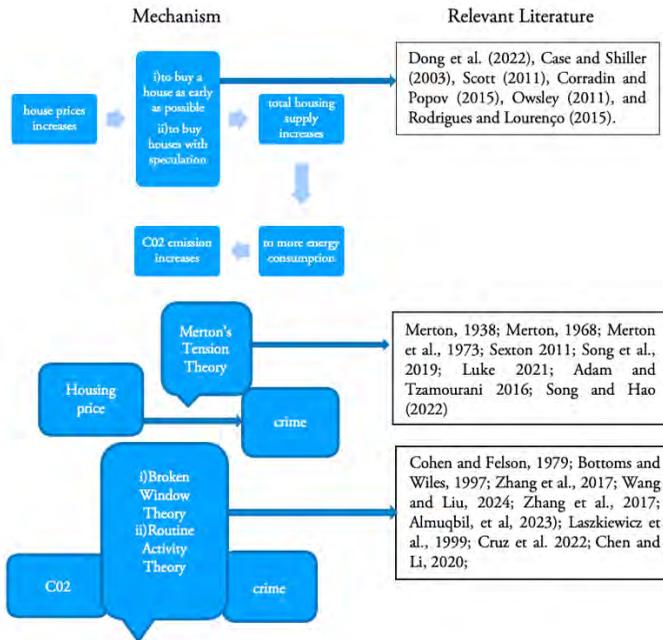
The limited timeframe for this analysis is primarily due to the unavailability of specific data beyond 2020. The core research includes the relationship among the housing price index (HP), the crime rate (CR), and CO2 emissions, which serve as the cornerstones of our comprehensive examination. Additionally, our research encompasses an array of socio-economic and demographic variables that potentially influence this relationship, such as the GDP growth rate (GDP), immigration rate (mig), and population rate (pop). Information regarding the indicators, measurements, and sources of the variables utilized in the study is presented in Table 6.

Table 6: Definitions of Variables

Variable's	Indicator	Measurement	Source
Housing Price Index	HP	Real house price indices	OECD (2024)
Crime Rate	CR	Intentional homicides (per 100,000 people)	WDI (2024)
CO2	CO2	CO2 emissions (metric tons per capita)	WDI (2024)
Economic Growth	GDP	GDP per capita (constant 2015 US\$)	WDI (2024)
Immigration Rate	Mig.	Net migration	WDI (2024)
Population Rate	Pop.	Population density (people per sq. km of land area)	WDI (2024)

Our central research hypothesis is to determine how housing prices affect the crime rate through CO2 emissions. The mechanisms, theories, and related research that may be the basis for this research hypothesis are summarized in

Figure 2. Mechanisms explaining the relationship between housing prices, crime rate, and CO2 emissions.



According to the first mechanism in the figure, how can the house price affect energy consumption, household consumption, and CO2 emissions? When the relevant reference is reviewed, we can say the following: Homeowners may focus on the “wealth effect” as the price of their home increases. This situation may lead to an increase in their welfare and, accordingly, an increase in their consumption (Song, 2007; Cong et al., 2023). At this point, we know that the industrial sector mainly consumes energy. However, some studies have shown that 45-55% of the total energy consumption originates from household consumption (Schipper et al., 1989). For example, according to a study conducted in the USA, more than

80% of the energy used and CO₂ released comes from economic activities resulting from consumer demands (Bin & Dowlatabadi, 2005). According to another study conducted in Guangzhou, 73.89 per cent of total carbon emissions come from the use of water heaters and kitchen appliances (Jiang et al., 2022). There is a similar situation in the country of Colombia. According to the report published by IEA, it is stated that the household electricity consumption rate increased by 95% between 2000 and 2023 in Colombia. According to the information obtained from the same source, it is stated that the largest electricity consuming sector of the country of Colombia is residential with 56%.(IEA, 2024).

The second mechanism is based on Merton's Tension Theory, which refers to the effect of house prices on crime. Essentially, the theory is about the pressure placed on individuals in capitalist societies to have high income and social status. Individuals who feel this pressure may commit crimes when they cannot reach the desired living conditions.

The last mechanism is the theories that we can use as a reference for the possible effects of CO₂ emissions on crime. Briefly, we can summarize the functioning mechanism of the theories as follows:

As Cohen and Felson symbolize under Routine Activity Theory, a criminal with the motivation and potential to commit a crime can commit a crime by identifying his target in an environment without adequate security. Routine activities and changes in social structure are essential in triggering crime (Cohen & Felson, 1979). Baryshnikova et al. (2019) point out that air pollution affects emotions and can potentially increase the tendency to commit crimes.

According to the Broken Window Theory by Kelling and Coles (1996), there may be a connection between airborne lead levels and property and violent crime. For a crime to be committed, there must be a security vulnerability. This relationship weakens in regions with higher security and increases in places with security vulnerabilities. Accordingly, there is a clear connection between the physical environment and the occurrence of crime.

Taking the perspectives mentioned above and the findings of related studies as a reference, we will focus on the impact of housing prices on crime, both directly and indirectly through CO2 emissions.

3.2. Methodology

We have employed path analysis as the primary model for this paper. Path analysis is commonly used within the Structural Equation Modeling (SEM) framework and shares similarities with regression analysis in identifying causal relationships.

It can be challenging to clearly define relationships that include humans and human behavior at their core. Variables can have both direct and indirect relationships with each other. At this point, examining complex relationships, testing theoretical models, and revealing the natural structure is complex. Path analysis is a powerful tool for analyzing complex relationships between variables. In path analysis, direct effects represent the immediate effect of one variable on another. In contrast, indirect effects occur when one or more mediating variables mediate the relationship between two variables.

Path analysis is a multivariate statistical technique used to reveal external variables' direct and indirect effects on internal variable(s) through path diagrams. It is based on linear statistical models like classical regression analysis and accepts the assumption of normal distribution. However, it is a technique that considers measurement error when examining linear relationships between variables and produces more robust results than regression analysis (Raykov & Marcoulides, 1999; Raykov & Marcoulides, 2006; Raykov et al., 2013).

The dependence of Y on X_1, X_2, \dots, X_n , and residual e_α can be written as follows (Witt, 1999; Land, 1969):

$$Y = \alpha + \beta_{12}X_1 + \beta_{13}X_2 + \dots + \beta_{1n}X_n + \beta_{1\alpha}e_\alpha \quad (1)$$

β coefficients are partial regression coefficients. However, unobservable hypothetical variables in the system may have effects. For this reason, path coefficients calculated by separating direct and indirect impact provide more

satisfactory information to determine the relationships between variables. Using deviation from the mean

$$(Y - M_Y) = k_{12}(X_1 - M_{X_1}) + k_{13}(X_2 - M_{X_2}) + \dots + k_{1n}(X_n - M_{X_n}) + k_{1\alpha}(e_\alpha - M_{e_\alpha}) \quad (2)$$

where M_i is the mean of the i th variable. Let $Z_i = \frac{(X_i - M_i)}{\sigma_i}$ and $p_{1i} = k_{1i} \left(\frac{\sigma_i}{\sigma_1} \right)$ where σ_i , denotes the standard deviation of the i th variable. Thus equation (3) becomes

$$Z_1 = p_{12}Z_2 + p_{13}Z_3 + \dots + p_{1n}Z_n + p_{1\alpha}Z_\alpha \quad (3)$$

p 's are path coefficients calculated by separating direct and indirect effects. Path coefficients are standardized regression coefficients. In this way, linear relationships between variables are analyzed by dividing them into direct effects, indirect effects, and compound path coefficients. Path analysis has some critical assumptions. The relationships between variables in road analysis must be linear and based on cause-effect relationships; errors are unrelated and not associated with different variables in the model.

The comparative fit index (CFI), the non-normal fit index (NNFI), the (standardized) root mean square residual (SRMR), and the root mean square error of approximation (RMSEA) criteria are used for criticizing the results. Of these criteria, CFI and RMSEA values vary between 0 and 1. A 0.90 or larger CFI value and an RMSEA value of 0.06 or less indicate robust model findings (Hu & Bentler, 1999; Sun et al., 2011).

The primary purpose of this study is to reveal the indirect effects of housing prices on crime via CO2. Based on this purpose, the mediation effect model constructed is as follows:

$$CR_t = \beta_0 + \beta_1 HP_t + \beta_2 X_t + e_1 \quad (4)$$

$$CO2_t = \alpha_0 + \alpha_1 HP_t + \alpha_2 X_t + e_2 \quad (5)$$

$$CR_t = \delta_0 + \delta_1 HP_t + \delta_2 CO2_t + \delta_3 X_t + e_3 \quad (6)$$

Where CR_t represents the ratio of crimes, HPT represents the housing price, $CO2_t$ represents carbon emission, X_{it} represents other factors that affect crime, and $C02$. β_0, α_0 , and δ_0 are constant terms of each equation, respectively. e_1, e_2 , and e_3 are the error terms of the equations.

Thus, it will be possible to observe the total, direct, and indirect effects of housing prices on crime when CO2 is considered a mediating variable. β_1 directly impacts house price on crime in equation 4. The fact that α_1 and δ_2 coefficients are significant shows that the mediating effect of the CO2 coefficient is valid and that the house price indirectly affects crime. Table 7 reports the relevant descriptive statistics of all variables.

Table 7. Descriptive statistics of the variables.

Variables	Mean	Std. Dev.	Max	Min	Period
Housing price index (HP)	49.054	19.938	85.427	24.242	2016-2019
Crime rate (CR)	.118	.066	.256	.017	2016-2019
GDP growth rate (GDP)	3.108	2.973	6.947	-7.252	2016-2019
Immigration Rate(mig)	.056	1.073	4.196	-2.947	2016-2019
Carbon emission (CO2)	.143	.07266	.184	.107	2016-2019
Population (pop)	.0146	.0037	.0206	.0069	2016-2019

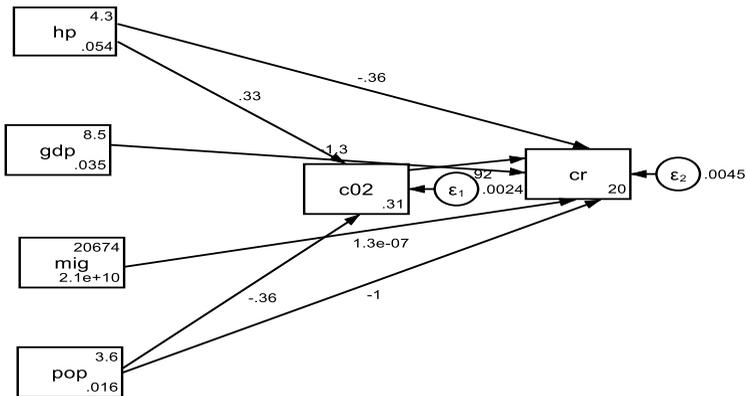
Table 7 summarizes descriptive statistics for the key variables used in the study covering the years 1990-2020 for Colombia. The mean and standard deviation of the house price index are 49,054 and 19,938, respectively, and regional differences in house prices vary between 24.242 and 8.427. We can say that the crime Rate (CR) is low, with a mean of 0.118, but its standard deviation is 2.973, and its variability between 0.017 and 0.256 indicates high crime rates. The mean of the GDP growth rate is 3.108, and its standard deviation is 2.973, fluctuating between 7.252 and 6.947. The average Immigration Rate (mig) is 0.056, indicating a small immigrant population. A standard deviation 1.073 indicates regional differences in migration rates ranging from -2.947 to 4.196. Carbon emissions (CO2) have a mean of 0.143 with a significant standard deviation of 0.072, reflecting substantial differences between 0.107 and 0.184. Population rate (population) data reveal varying regional population sizes, with a maximum of 0.0206, a minimum of 0.0069, and an average of 0.146, highlighting the potential impact of population changes on crime and housing market dynamics. These statistics form the basis for a more in-depth analysis of the relationships

between housing prices, crime rates, C02, and socio-economic variables in the Colombian context.

4. Model Results

According to Figure 1, six are significant at the .05 level among the seven paths. Consistent with the first hypothesis, housing price has a positive direct effect on the C02.

Figure 3. Path diagram with standardized coefficients for the model. $\chi^2=2.158 (0.340)$, $CFI=0.99$, $TLI=0.995$, $RMSEA=0.051$, $SRMR=0.025$.



Given the association between housing prices and crime rates, the C02 coefficient may mediate. Notably, the relationship between housing prices and the crime coefficient has been observed to be negative. Several factors may explain this observation. The wealthiest segments utilize their financial assets through many alternative channels rather than purchasing housing. The group that depends on housing income is middle-income families. For this group, rising house prices could lead to a wealth effect. As a result, the increase in house prices could help narrow the income gap between these two groups. Most middle-income homeowners' homes comprise a significant portion of their total wealth. Therefore, increasing housing prices can narrow the wealth gap between middle-income and high-income families (Luke, 2021). Increasing housing prices may

encourage housing supply and investments in this area. This way, employing more construction workers can partially reduce the gap between low-income and middle-income families. These situations can reduce crime, decrease conflicts and unrest arising from income inequality, and increase the number of people working in legal jobs. Increasing housing prices can lead to gentrification, which means economic development and improvement in some regions. As a result, people with higher incomes may move to this area. High-income people can often increase social control by taking more security measures. In this way, social dynamics in that region may change, and crime rates may decrease.

However, this negative relationship is achieved by the direct effect of housing prices on crime. When we look at the indirect effect, the relationship turns positive. Because increasing housing prices may cause economic and social pressure on some people, this pressure can cause people to engage in illegal activities. Therefore, the impact of housing prices on crime rates is a complex issue that involves many different factors. One of these factors may be the increase in carbon emissions. Many theories and empirical studies indicate that high carbon emissions can lead to aggressive attitudes, anxiety, and violence in people.

Table 8. Direct, indirect, and total effects of the variables on the crime rate.

	Direct	Indirect	Total
<u>Exogenous variable</u>			
hp	-.362	.303	
gdp	-1.301	-	-1.301
Pop	-1.011	-.331	-1.342
<u>Mediating variable</u>			
C02	.916	-	.916

The relationship between population and crime was found to be negative. This result aligns with some research findings (Kvalseth, 1977; Battin & Crowl, 2017). So, by what mechanism can the crime rate decrease as the population increases? It is difficult to say this directly. However, crime rates may decrease in societies with high social solidarity and solid social ties. If the dynamics of the society are suitable for this, the abovementioned situation can occur.

On the other hand, if population growth accelerates economic growth, it will reduce poverty, and crime rates may decrease, creating more jobs and

employment opportunities. On the other hand, if understanding and tolerance towards cultural diversity can be established through the influence of government policies, conflicts may decrease. As we mentioned, this situation may vary depending on the structure of the society examined, cultural level, income level, and policies implemented. Therefore, the impact of population growth on crime is a complex issue that includes many dynamics.

The study demonstrates a negative relationship between GDP growth rate and crime. This finding is consistent with previous research, which suggests that a rise in actual income results in a decrease in property crimes (Aksu & Akkuş, 2010; Odabaşı, 2021) and a negative long-run relationship between income and crime (Baharom et al., 2013; Calnitsky and Gonalons-Pons, 2021; Lovett, 2018; Guvercin, 2018). Increasing income levels lead to increased job opportunities and more people being employed. New job opportunities allow individuals to make money legally and reduce crime. Income increases also allow the economic welfare of society to increase. Reducing poverty may reduce crime rates. This situation also means ensuring access to education and equal opportunity. Societies with higher education levels can achieve better standards of living. Increasing prosperity in society can increase social balance and tolerance. In this way, conflict in society can be reduced. As stated in Moretti (2013), increases in housing prices can lead to increased investments in this area and, therefore, employment, reducing the gap between high- and low-income earners. However, as we mentioned about population, the operation of these mechanisms is related to many economic and social mechanisms. In addition, it is necessary to evaluate this relationship according to geographical regions and the fundamental dynamics of societies.

This study analyzed the mediating role of the CO₂ coefficient on crime and found a positive impact. Some studies found positive findings (Sharma & Pandey, 2023; Herrnstadt et al., 2021; Taylor et al., 2016; Heyes & Saberian, 2015).

The increase in carbon emissions may also affect crime rates through some possible mechanisms. Increasing carbon emissions lead to climate changes, extreme weather events, and natural disasters. Disruption of peace and order in society and increased theft, looting, and other crimes are joint after disasters. On the other hand, climate change may lead to job and income losses and uncertainty in agriculture, fisheries, tourism, and other sectors. All these challenges can

impact crime rates due to increased unemployment and poverty. On the other hand, considering that they also affect the neurological structure of individuals, all these situations may cause increased violence and social unrest.**Robustness Check**

We subjected the analysis to additional testing to increase the robustness of the analytical results. The ARDL results, which question the existence of a long-term relationship, are given in Table 9.

Table 9. ARDL Bound Estimation Results

Test statistic	Value	K
F-statistic	3.2845*	5
Critical value bounds	I (0)	I (1)
10%	2.08	3
	2.39	3.38
5%	2.7	3.73
2.5%	3.06	4.15
1%		
Long-run analysis and ccm coefficient	Coefficient	β
ccm	-1.1228	(0.0001)
C02	1.4667	(0.0152)
HP	0.6293	(0.0755)
GDP	-4.8746	(0.0033)
MIG	0.000026	(0.3300)
POP	-1.0548	(0.7197)
Diagnostic tests		
R ²	0.991	
Adjusted R ²	0.982	
F-statistic	1.683	
ARCH	1.682	
CUSUM	Stable	
CUSUMSQ	Stable	
Note: * Significant at 10 percent		

According to the results of the ARDL, there is a long-term relationship with a margin of error of 10% (Pesaran et al., 2001). C02 and HP coefficients are significant and positive. GDP is negative and significant.

5. Discussion

Colombia ranks third among South American countries, after Peru and Argentina, in terms of the ratio of house prices to income index in 2023, with 18.1. Again, after Venezuela and Argentina, it ranks third in the housing affordability rate at 0.4. Among South American countries, Colombia ranks third with 18.1 points, after Peru and Argentina, regarding the ratio of housing prices to income. It ranks third in housing purchases, after Venezuela and Argentina, with 0.4. Colombia ranks 9th in air pollution, 27th in the world, and 15th in the Americas in crime rate (crime Index by Country 2024 (numbeo.com)). All these figures place Colombia among the countries experiencing problems such as crime, air pollution, and housing prices.

Excessive increases in housing prices in recent years have become a severe problem that profoundly affects many countries. Large masses of people are negatively affected by this situation. Housing prices can affect crime through many channels. As stated in the study's introduction, Merton's tension theory constitutes the theoretical argument for the direct connection between housing prices and crime. In capitalist societies, individuals aim to achieve a higher standard of living. At this point, having a good job, a good home, and social status constitute the primary goals of individuals. Individuals who encounter obstacles in achieving these goals tend to commit crimes when the environment and conditions in which the crime is committed are suitable.

On the other hand, the increase in housing prices affects both housing demand and housing supply. The expectation that prices will rise further may force individuals to own a house as soon as possible. At the same time, when housing is considered an investment, speculative housing demand may increase. Increasing demand brings with it an increase in supply. Producing more housing leads to energy use and affects air pollution. At the same time, increasing housing prices will increase individuals' consumption by creating a feeling of wealth increase in middle-income households. It may lead to air pollution through increased energy use.

Although the relationship between air pollution and crime cannot be fully explained, there are various theories about how air pollution can lead to crime. As stated in one of these theories, studies are proving that air pollution causes vitamin D deficiency, and vitamin D deficiency causes anti-social behavior in

children and cognitive disorders and depression in adults. On the other hand, air pollution can cause the brain to produce less serotonin, which can lead to anxiety, aggressive behavior, and crime. According to WHO (2024), air pollution causes respiratory, cardiovascular, and neurological disorders, stress, and frustration. Such situations can cause aggression and violence in some individuals. Many studies reveal these relationships.

Since humans are complex, defining and predicting their behavior is problematic. Moreover, modeling these behaviors requires high skill. When first heard of this study, it may be challenging to consider the link between house prices, crime, and air pollution. Establishing this connection may raise some questions. However, theories and empirical studies show that thinking about this connection is not far from reality. The empirical findings of our research also support this relationship network.

6. Conclusion and Policy Implications

If we want to reduce the crime problem in society, we need to know that the dynamics of crime can be affected by many factors. The primary life expectancy of individuals is to survive in a safe and clean environment. The study's primary purpose is to draw attention to the implicit connections of these dynamics, which initially seem unrelated.

At this point, governments need to implement housing policies that promise a better standard of living. Housing is one of human beings' most basic needs; every person should benefit from the right to shelter. At this point, housing assistance policies should be implemented according to income level to increase housing affordability for low- and middle-income families. At the same time, fair rent control and capping rent increases in a way that does not victimize landlords can also protect low-income families. On the other hand, additional taxes are successfully applied to vacant houses in some countries to prevent speculative housing demand.

Various policies and practices should be considered to prevent excessive increases in housing prices and, at the same time, to manage the housing sector sustainably without increasing CO₂ emissions. For example, building energy-efficient buildings can reduce residential operating costs and CO₂ emissions. At this

point, encouraging green housing projects based on renewable energy sources can reduce CO2 emissions while increasing the housing supply. On the other hand, using the public transportation system to reduce CO2 emissions is essential. Therefore, it is of great importance to carry out urban planning in a way that encourages sustainable transportation. Again, encouraging carbon-free or low-carbon options in selecting construction materials can reduce CO2 emissions.

These and similar practices can prevent excessive increases in housing prices and encourage sustainable housing sector practices without increasing CO2 emissions. However, each country and region has its dynamics. These policies will need to be adapted to local conditions.

Suppose we evaluate the issue specifically in Colombia. In that case, the following: In Colombia, which has a high hydroelectric potential, more investments can be made in renewable energy sources such as hydroelectricity, solar energy, wind energy, and biomass. In this way, the use of fossil fuels can be reduced by reducing carbon emissions in the energy sector. Again, carbon emissions can be reduced by encouraging clean production technologies in industrial facilities. On the other hand, economic rewards can also be given to companies that produce by paying attention to this issue.

Of course, raising public awareness and awareness is essential to implement clean environmental policies. At this point, it is precious to encourage and inform individuals about using energy-saving devices.

One of the most essential points to consider is the protection of existing forest areas and the implementation of new afforestation projects. In this way, carbon emissions can be reduced, biodiversity can be protected, and ecosystem services can be improved.

Achieving all this will require firm policy and legal reforms. The government and local governments can set stricter standards and targets for sustainability and carbon reduction, which can reduce carbon emissions. However, the whole society must be mobilized to reduce carbon. Scientific research, policy analysis, and broad public participation are required to develop an effective strategy.

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3

UNEMPLOYMENT CONVERGENCE IN EIGHT SOUTH AMERICAN COUNTRIES: NEW EVIDENCE USING A NON-LINEAR PANEL UNIT ROOT TEST

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Abstract

This study investigates unemployment convergence across eight South American countries from 1982 to 2022 utilizing a non-linear panel analysis framework. Specifically, the analysis employs a two-regime threshold autoregressive (TAR) model, where the panel series exhibits unit root characteristics. The TAR model integrates three methodologies: the determination of critical values via the threshold model, panel unit root tests, and bootstrap simulations. Initially, a linearity test was conducted, followed by a threshold autoregressive panel unit root test to evaluate the stationarity of the series. The analysis results reject the null hypothesis of linearity in the first stage. Subsequently, Chile was identified as the transition country between the two regimes. Finally, the findings confirm the presence of convergence in both regimes. The results further indicate that unemployment rates in the first regime exhibit conditional convergence.

Keywords: *Unemployment Convergence, Panel TAR, South American Countries*

Jel Codes: *E24, C23, N16*

1. Introduction

South American countries (SAC) comprise developing economies with substantial populations, primarily located in the southwestern hemisphere. Despite accounting for only 5-6% of the global population, these nations hold a significant position in the global economy due to their abundant natural resources (Gonzalez-Cabezas, Zaror and Herrera 2018). However, income inequalities are one of the main problems common to the region (Bassey et al. 2023). Throughout its history, South America has undergone numerous economic cycles characterized by periods of economic boom and bust, often triggered by significant shocks such as high unemployment rates and financial crises. High unemployment is a critical factor exacerbating migration flows to the United States and Europe (Ayala, Cuñado and Gil-Alana 2012). A notable concern in Latin American labor markets in recent years is the increasing average duration of unemployment periods, even in 2021 when unemployment rates showed a declining trend (Maurizio 2022). This phenomenon is primarily attributable to the region's prolonged economic slowdown, further aggravated by the COVID-19 pandemic, which had a severe impact on both the economy and labor markets in the region (Beccaria, Bertranou and Maurizio 2022). Additionally, many South American countries continue to grapple with deep-seated structural issues, including widespread informal labor, low wages, low average incomes, poverty, and inequality.

In countries such as Argentina, Brazil, and Uruguay in South America, corporatist-origin institutions play a certain role in collective bargaining processes, despite these nations not being characterized as coordinated economies (Martín-Artiles, Chávez-Molina and Semenza 2021: 42). The high prevalence of the informal sector and unregistered employment are identified as key factors behind this lack of coordination, creating significant barriers to collective bargaining and wage policies. Unregistered employment not only leaves a large segment of the workforce unprotected but also serves as a barrier to access quality employment opportunities. Similarly, although Chile in South America is often cited as an example of successful education and employment policies, it shares similar developmental challenges with other Latin American countries (Bogliaccini, Madariaga and Peralta 2022).

Since the concept of convergence was introduced as a key implication of Solow's (1956) neoclassical growth model, it has emerged as one of the most extensively studied topics in economics. According to this theory, countries with lower per capita income are expected to grow faster than developed countries, ultimately converging in income levels. The concept of "income convergence" was first rigorously analyzed by scholars such as Barro and Sala-i Martin (1992) and Mankiw, Romer and Weil (1992). While much of the early research focused on income convergence, recent studies have increasingly turned their attention to panel analyses examining a broader range of macroeconomic indicators, including unemployment, health, technology, energy, and inflation (Welsch and Bonn 2008).

Research into the dynamics of unemployment rates began with the *natural rate hypothesis* proposed by Phelps (1967, 1972) and Friedman (1968). This theory posits that while unemployment rates may temporarily deviate in the short term, they ultimately revert to their equilibrium level in the long term (Omay, Özcan and Shahbaz 2020). Hence, the effects of shocks to unemployment rates are considered transitory. However, Blanchard and Summers (1986) introduced the *hysteresis hypothesis*, which argues that such deviations can lead to a shift in the long-term equilibrium, resulting in permanent effects. The persistence of these impacts is attributed to demand-side shocks, causing unemployment rate series to exhibit non-stationary behavior and underscoring the need for more assertive central bank policies to restore unemployment to its mean. In this context, inflation-targeting policies may inadvertently exacerbate unemployment (Krištić, Dumančić and Arčabić 2019). Another perspective is provided by Phelps' (1995) *structuralist hypothesis*, which suggests that unemployment rates can undergo permanent structural changes over time. The labor market's tendency to return to equilibrium in the long run also points to the phenomenon of unemployment rate convergence. A lack of labor market flexibility implies a slower pace of economic convergence to a steady state (Alonso, Echevarria and Tran 2004). Therefore, understanding the stochastic behavior of labor markets is crucial for designing effective employment strategies.

This study investigates the convergence of unemployment rates across eight South American countries over the period 1982-2022, using annual data and applying the nonlinear panel unit root test proposed by Beyaert and Camacho (2008). Specifically, the study explores whether the effects of temporary shocks

on unemployment rate disparities, relative to the average of the eight South American countries, dissipate over time, thereby testing the hypothesis of unemployment rate convergence. Understanding this convergence is crucial for evaluating the evolution of unemployment rate disparities across South American countries and for comparing socioeconomic development between regions. Furthermore, in South American countries, the implementation of common policies focused on labor market formalization, collective bargaining, and enhanced social protection for workers could serve as effective measures to address inequalities (Martín-Artiles, Chávez-Molina and Semenza 2021). Certainly, while countries in Latin America and the Caribbean share common challenges related to external dependency, poverty, and fragile economic structures, the region is inherently heterogeneous (de Almeida, Esperidião and de Moura 2024). The differences among these countries necessitate caution when making generalizations about the entire region. Taking this inter-country heterogeneity into account, we have limited our analysis to the countries of South America.

The primary contribution of this study lies in its application of the two-regime threshold autoregressive (TAR) panel unit root approach developed by Beyaert and Camacho (2008). This methodological innovation distinguishes our research, as it represents the first application of this approach to analyze unemployment convergence in South America. Previous studies have largely overlooked the nonlinear characteristics of unemployment rates. The TAR unit root approach offers several distinct advantages. Firstly, it begins by testing for linearity against nonlinearity, with problematic parameters addressed through bootstrap probability values using the likelihood ratio principle. If linearity is rejected, the analysis progresses within a nonlinear framework, allowing the data to be segmented into two regimes. This segmentation enables the data to exhibit different characteristics across regimes, meaning countries may converge in one regime while diverging in another. Additionally, this approach allows for differentiation between absolute and conditional convergence, incorporating various convergence models within each regime (Beyaert and Camacho 2008). Our key findings indicate that the convergence hypothesis was not rejected for either Regime I or II. Furthermore, the results suggest that conditional convergence prevails in Regime I. The remainder of the study is structured as follows: Following the introduction, the second section provides a review of the literature. The third section introduces the econometric methodology. In the

fourth section, data and empirical findings are presented, leading to the conclusion in the final section.

2. Literature Review

The convergence hypothesis, initially articulated in Solow's (1956) seminal work "A Contribution to the Theory of Economic Growth," has become one of the most empirically tested hypotheses across a range of macroeconomic variables within the growth literature. Over time, various empirical strategies have been developed to assess the validity of this hypothesis. Among these, the most widely recognized are the absolute- β and conditional- β convergence tests. Absolute- β convergence suggests that unemployment rates converge toward a common stationary level, irrespective of local conditions. In contrast, conditional- β convergence posits that convergence is contingent upon structural parameters unique to specific local labor markets (Barro and Sala-i-Martin 1992: 224-227).

Additionally, the distribution of unemployment rates across specific countries or regional groups over time is often tested for σ -convergence. This form of convergence assesses whether disparities in unemployment rates are diminishing over time. The persistence of regional differences in unemployment rates is further analyzed using the stochastic convergence approach, as initially explored by Carlino and Mills (1993), Bernard and Durlauf (1995), and Evans and Karras (1996). The stochastic convergence framework not only identifies the presence of a convergence process but also determines which regions are converging and which are not (Carrion-i-Silvestre and German-Soto 2007). This approach is particularly robust when applied through unit root and co-integration methodologies that account for structural breaks, enhancing the detection of stochastic convergence (Tyrowicz and Wójcik 2010a).

While there exists a substantial body of research on unemployment hysteresis, studies focusing on unemployment convergence remain relatively scarce. The majority of the literature is concentrated on European Union countries (e.g., Baddeley, Martin and Tyler 1998; Bayer and Juessen 2007; Costantini and Lupi 2006; Tyrowicz and Wójcik 2010a, 2010b, 2011; Simionescu 2014; Beyer and Stemmer 2016). In contrast, research addressing Latin American or South American countries is limited and predominantly takes the form of regional studies. For example, Gomes and da Silva (2009) provide strong evidence

supporting hysteresis across six metropolitan regions in Brazil, highlighting the persistence of unemployment disparities among regions. On the other hand, De Figueiredo (2010) utilized the fractional stochastic convergence criterion developed by Mello and Guimarães-Filho (2007) to uncover evidence of convergence in regional unemployment rates within Brazil. Meanwhile, Diaz (2016) employed a spatial Durbin model in his study of Colombia but did not find evidence supporting unemployment convergence.

Conversely, recent literature has increasingly focused on the nonlinear behavior of unemployment rates (Skalin and Teräsvirta 2002; Franchi and Ordóñez 2011; Cuestas, Monfort and Ordóñez 2015). Neftçi's (1984) pioneering work in this area has been particularly influential. Neftçi (1984) explored the impact of business cycle fluctuations by applying a second-order Markov chain to analyze the asymmetric behaviors of the US unemployment series, identifying that unemployment rates exhibit different regimes. Building on this foundation, Franchi and Ordóñez (2011) investigated the nonlinear dynamics of unemployment rates in Spain using multiple equilibrium models. Nonlinear time series models allow for the examination of dynamic behavior that depends on varying regimes, offering a more nuanced understanding of unemployment dynamics. Similarly, Cuestas, Monfort and Ordóñez (2015) employed a flexible nonlinear methodology, based on smooth transition mechanisms, to explore the influence of Germany on the convergence process of Central and Eastern European countries with Western Europe. Their findings revealed the existence of two convergence clubs. Thus, this study underscores the necessity of moving beyond traditional linear methodologies to capture the nonlinear dynamics of unemployment rates effectively.

3. Method

3.1. Methodology

This study employs an econometric framework, specifically Model (1) developed by Beyaert and Camacho (2008), to investigate real convergence within a nonlinear panel data context. The methodology encompasses three core approaches: the threshold autoregressive model, panel data unit root tests, and

the computation of critical values using bootstrap simulation techniques (Beyaert and Garcia-Solanes 2009; Yavuz and Yilanci 2013; Yilanci and Pata 2020).

The initial phase of the methodology involves applying Model (1) to assess the linearity of the model. This is followed by utilizing Evans and Karras (1996) to test for real convergence in panel data. The approach allows for a detailed examination of convergence dynamics by accounting for potential nonlinearities and structural breaks.

$$\Delta u_{n,t} = \delta_n + \rho_n u_{n,t-1} + \sum_{i=1}^p \varphi_{n,i} \Delta u_{n,t-i} + \varepsilon_{n,t}, \quad n = 1, \dots, N, \quad t = 1, \dots, T \quad (1)$$

where n denotes cross-sectional units, and, t represents time periods. The variable $u_{n,t}$ is defined as $u_{n,t} = U_{n,t} - \bar{U}_t$, where $U_{n,t}$ denotes the unemployment rate of country n and \bar{U}_t represents the average unemployment rate across n countries. The assumptions of the model are as follows:

$$H_0: \rho_n = 0$$

$$H_a: \rho_n < 0$$

The failure to reject the null hypothesis ($\rho_n = 0$) indicates divergence of the n units (countries), whereas the condition $0 < -\rho_n < 1$ for all n units implies convergence across all units. In other words, the alternative hypothesis implies convergence of country economies, whereas the opposite indicates divergence. This precisely tests whether panel series are in a unit root process (Tipoy 2019).

When the linearity assumption is not rejected, the convergence analysis continues within the linearity framework. Conversely, if the linearity assumption is rejected, the investigation is continued with the nonlinear extension proposed by Beyaert and Camacho (2008) through Model (2), which is an extension of the Evans-Karras approach.

$$\Delta u_{n,t} = [\delta_n^I + \rho_n^I u_{n,t-1} + \sum_{i=1}^p \varphi_{n,i}^I \Delta u_{n,t-1}] I_{\{z_{t-1} < \lambda\}} + [\delta_n^{II} + \rho_n^{II} u_{n,t-1} + \sum_{i=1}^p \varphi_{n,i}^{II} \Delta u_{n,t-1}] I_{\{z_{t-1} \geq \lambda\}} + \varepsilon_{n,t} \quad (2)$$

Model (2) is based on a two-regime, panel data threshold autoregressive model in which the panel series exhibit unit roots.

These testing results confirm that the validation of the non-linear model indicates the impact of the cyclical position in the economy on convergence, whereas when a linear model is assumed, there is no effect on convergence (Beyaert and Garcia-Solanes 2009).

When the assumption of a linear model is rejected, in the second step of the research, divergence-convergence against divergence is tested within the framework of Model (2). The null hypothesis of the model is:

$$H_{0,2}: \rho_n^I = \rho_n^{II} = 0 \forall n$$

If $\rho_n^I = \rho_n^{II} = 0$ for all n is not rejected, it is assumed that there is divergence in both regimes; conversely, $0 < \rho_n^i < 1, i = I, II, \forall n = 1, \dots, N$ is accepted, it is assumed that there is convergence in both regimes. If a country shows convergence in one regime but not in another, partial convergence or divergence occur (Beyaert and Garcia-Solanes 2009). Depending on the economic interest area, three different hypotheses can be proposed:

$$H_{A,2a}: \rho_n^I < 0, \rho_n^{II} < 0 \forall n$$

$$H_{A,2b}: \rho_n^I < 0, \rho_n^{II} = 0 \forall n$$

$$H_{A,2c}: \rho_n^I = 0, \rho_n^{II} < 0 \forall n$$

The hypothesis $H_{A,2a}$ that expresses full convergence implies that units converge in both regimes; the other two alternative hypotheses imply partial convergence, meaning convergence only in either the I or II regimes. If the parameter δ_n in the model is zero ($\delta_n = 0$), it indicates absolute convergence for all n , whereas if it is non-zero, it signifies conditional convergence.

In Model (2), the binary variable $I\{x\}$ takes the value 1 when $I\{z_{t-1} < \lambda\}$ occurs and 0 otherwise. In this context, Model (2) indicates that the system is in one of two different regimes depending on the movement of unemployment at any time t .

If $I\{x\} = 1$, then $\{z_{t-1} < \lambda\}$, the system is in the first regime, and the model is:

$$\Delta u_{n,t} = [\delta_n^I + \rho_n^I u_{n,t-1} + \sum_{i=1}^p \varphi_{n,i}^I \Delta u_{n,t-1}] + \varepsilon_{n,t} \quad (3)$$

If $I\{x\} = 0$, then $\{z_{t-1} < \lambda\}$, the system is in the second regime and the model:

$$\Delta u_{n,t} = [\delta_n^{II} + \rho_n^{II} u_{n,t-1} + \sum_{i=1}^p \varphi_{n,i}^{II} \Delta u_{n,t-1}] + \varepsilon_{n,t} \quad (4)$$

The threshold parameter, λ , and z_t variable, compares the value taken at time t with the value taken at time $(t-1)$, determining whether the economy is in regime I or regime II. The variable z_t can be either exogenous or endogenous. The parameter λ , like other parameters of the model, is an unknown value and should be estimated (Yavuz and Yilanci 2013). For the null and alternative hypothesis, it is assumed that the coefficients ρ provide the same characteristics for all countries at a given time.

In panel data analysis, the $R^2 = t_I^2 + t_{II}^2$ statistic is used to distinguish between alternative hypotheses. Here, t_I and t_{II} , ρ_n^I and ρ_n^{II} are t -type statistics related to parameter estimation. For each regime:

$$t_i = \frac{\hat{\rho}_n^i}{S_{\rho_n^i}}, i = I, II$$

According to the definition of R^2 , large R^2 values support convergence. For any $i=I, II$ regime, large t_i values are evidence supporting convergence.

The final step of the research encompasses the process of testing conditional convergence against absolute convergence in the regime where convergence emerges. Absolute convergence presupposes a process in which converging countries share the same steady state, whereas conditional convergence refers to a non-coincident parallel process. In the context of Model (2), it is concluded that there is absolute convergence when the hypothesis $\rho_n^i < 0$ is maintained for \forall_n and \forall_i , and $\rho_n^i = 0 \forall_n$ for \forall_n ve \forall_i . In the scenario where convergence occurs only in one regime, if the convergence process is partial, for example, in regime I, absolute convergence corresponds to $\rho_n^i = 0, \forall_n = 1, \dots, N$.

However, another interesting scenario in a two-regime model is when $\rho_n^i < 0, n = 1, \dots, N; i = I, II$ emerges, but only for a single $i, \rho_n^i = 0$. Such a situation indicates the presence of absolute convergence in one regime (I or II) and conditional convergence in the other (Beyaert and Camacho 2008). To test these different scenarios, φ_a, φ_b , and φ_c statistics are employed.

$$\varphi_a = \frac{1}{2N-1} \left\{ \sum_{n=1}^N [t(\hat{\delta}_n^I)]^2 + \sum_{n=1}^N [t(\hat{\delta}_n^{II})]^2 \right\} \quad (5)$$

$$\varphi_b = \frac{1}{N-1} \left\{ \sum_{n=1}^N [t(\hat{\delta}_n^I)]^2 \right\} \quad (6)$$

$$\varphi_c = \frac{1}{N-1} \left\{ \sum_{n=1}^N [t(\hat{\delta}_n^{II})]^2 \right\} \quad (7)$$

The acceptance of alternative hypotheses $H_{A,2a}, H_{A,2b}$, and $H_{A,2c}$ against the null hypothesis $H_{0,2}$ is evaluated based on the φ_a, φ_b , and φ_c statistics as follows (Beyaert ve Camacho 2008; Tipoy 2019):

When the null hypothesis $H_{0,2}$ is rejected in favor of the alternative hypothesis $H_{A,2a}$:

- If φ_a is too large: Conditional convergence in both regimes;
- If φ_b is too large and φ_c is not: Conditional convergence under regime I and absolute convergence under regime II;
- If φ_c is to large and φ_b is not: Conditional convergence under regime II and absolute convergence under regime I;

When the null hypothesis $H_{0,2}$ is rejected in favor of the alternative hypothesis $H_{A,2b}$:

- If φ_b is too large: Conditional convergence under regime I;
- If φ_b is not large enough: Absolute convergence under regime I;

When the null hypothesis $H_{0,2}$ is rejected in favor of the alternative hypothesis $H_{A,2c}$:

- If φ_c is too large: Conditional convergence under II;
- If φ_c is not large enough: Absolute convergence under regime II

3.2. Data

The dataset for this study comprises annual unemployment rates for Argentina, Brazil, Bolivia, Chile, Colombia, Paraguay, Peru, and Uruguay spanning from 1982 to 2022. Although South America consists of 12 countries, data scarcity has significantly hindered comprehensive unemployment analysis. Unemployment statistics are often fragmented, with substantial variations in measurement practices across countries and over time (Ball, Roux and Hofstetter 2013). Consequently, the selection of South American countries for this study was based on data availability, with all data sourced from the World Bank's Development Indicators (WDI) and national statistical agencies. Due to limitations in data completeness, interpolation techniques were employed to estimate unemployment rates for some countries.

Table 1 presents the estimated correlation matrix for unemployment rates. The matrix reveals distinct groupings of countries based on the degree of correlation in their unemployment rates. Specifically, Argentina, Brazil, and Uruguay display a high positive correlation in their unemployment rates. Conversely, Argentina shows a negative correlation with Bolivia, Chile, and Peru. Chile exhibits a similar cyclical pattern in unemployment rates with Colombia and Paraguay. Brazil, in contrast, has a negative correlation with Peru, while Bolivia also shows a negative correlation with Brazil.

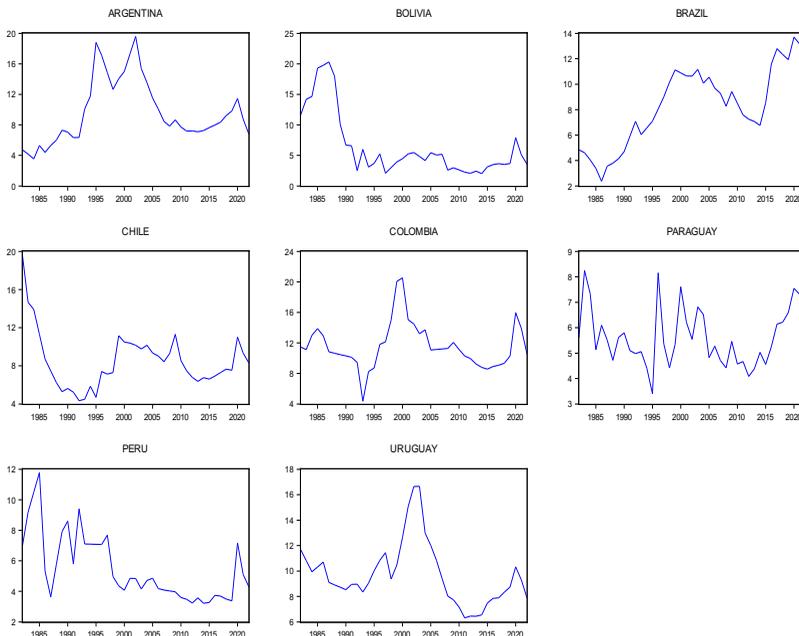
Table 1: Correlation matrix

	Argentina	Bolivia	Brazil	Chile	Colombia	Paraguay	Peru	Uruguay
Argentina	1							
Bolivia	-0.44574	1						
Brazil	0.536129	-0.65768	1					
Chile	-0.10068	0.321021	0.023264	1				
Colombia	0.364193	0.112684	0.306581	0.503954	1			
Paraguay	0.059042	0.230818	0.215416	0.451263	0.413111	1		
Peru	-0.14826	0.464489	-0.50726	0.168664	0.011622	0.20685	1	
Uruguay	0.615828	0.163405	0.199931	0.421069	0.538788	0.386771	0.170864	1

Figure 1 illustrates the distribution of unemployment rates across eight South American countries from 1982 to 2022. The figure highlights a notable pattern

of elevated unemployment rates, particularly pronounced during the 1990s. This period was marked by significant economic transformations, including liberalization of foreign trade, production rationalization efforts, and the introduction of atypical employment contracts involving foreign capital (Oliveira de Menezes 2021). As depicted in the figure, unemployment rates in the analyzed countries began to decline in the 2000s but experienced a sharp increase from 2015 to 2020. Post-2021, there has been a noticeable downward trend in unemployment rates. Nonetheless, addressing employment policies remains a substantial challenge due to the inherently fragile and unequal nature of labor markets in South American countries.

Figure 1. Annual unemployment rate for Argentina, Bolivia, Brazil, Chile, Colombia, Paraguay, Peru and Uruguay



The data indicate significant heterogeneity in unemployment rates across Latin America. Long-term unemployment rates vary notably, ranging from 5.4% in Peru to 11.5% in Colombia. The average unemployment rate across the countries

under study is 8.14%, with a standard deviation of 3.79%. This considerable variation underscores the need to investigate the validity of the convergence phenomenon within the context of unemployment in South American countries.

4. Empirical Results

To provide a comparative analysis with the TAR panel methodology, the linear Evans-Karras model was first estimated. The results presented in Table 2(a) indicate convergence of unemployment rates among the eight South American countries, as the null hypothesis of divergence is rejected, evidenced by a p-value below the 0.05 significance level. However, the null hypothesis of absolute convergence cannot be rejected, as the p-value (0.69) exceeds the conventional critical value of 0.05.

Table 2: Results of Linear Evans-Karras and TAR Model

(a) Results of linear Evans–Karras model					
Divergence versus convergence			Absolute versus conditional convergence		
0.0001			0.6945		
Convergence			Absolute convergence		
(b) Results of TAR model					
Linearity tests		Transition country	d	λ	% observations in regime I
Unrestricted	Restricted	Chile	1	-0.5781	21.6216
0.0134	0.0112				
Convergence tests					
Divergence versus convergence			Absolute versus conditional convergence		
Regime I	Regime II	Both	Regime I	Regime II	Both
0.0096	0.0006	0.0004	0.0598	0.1598	0.0479
Full convergence			Conditional in Regime I and Absolute in Regime II		

Note: The critical values represent the p-probability values from 10,000 iterations of bootstrap resampling. d and λ respectively denote the lag and threshold parameters. The lag length in both linear and non-linear TAR models is determined using the Bayesian Information Criterion (BIC).

Table 2(b) presents the statistical results of the nonlinear TAR model. The initial analysis, as shown in Table 2(b) indicates that both the restricted and unrestricted bootstrap p-values ($p_{\text{restricted}} = 0.0112$ and $p_{\text{unrestricted}} = 0.0134$ respectively) are below the %5 critical value. These results require rejecting the null hypothesis of linearity for the panel data. Chile has been identified as the transition country between regimes, with this designation being determined

endogenously within the model. The estimated threshold parameter (λ) is -0.5781. Therefore, it can be stated that the transition variable is $U_{CHILE,t} - U_{CHILE,t-1}$ and Regime 1 corresponds to the years when the difference between Chile's unemployment growth rates and the average unemployment growth rates of the eight South American countries is below -0.5781%. Observations with values below this threshold fall into Regime I, whereas those above the threshold belong to Regime II. Regime I accounts for only 21% of the sample, while Regime II comprises 79% of the observations.

In the bottom section of Table 2(b), the hypothesis of convergence versus divergence is tested for Regime I, Regime II, and both regimes combined. The null hypothesis, which posits no difference in means between the two regimes, is rejected with p-values of 0.0096 and 0.0006, respectively. This indicates the presence of convergence across both regimes. Thus, it can be inferred that unemployment rates have converged within each regime, signifying complete convergence. However, the degree of convergence in Regime II is stronger than in Regime I. Additionally, the null hypothesis of "absolute convergence versus conditional convergence" is rejected in Regime I at the 0.10 significance level ($0.059 < 0.10$) but is not rejected in Regime II. Therefore, conditional convergence is confirmed for Regime I at the 0.10 significance level. Furthermore, the rejection of the null hypothesis of a unit root in both regimes suggests that shocks to unemployment differentials are temporary.

Figure 2 shows the series depicting deviations of unemployment rates from the regional average. Notably, since the 2000s, these deviations have been relatively low, indicating a trend toward convergence in unemployment rates among South American countries. Countries such as Argentina, Brazil, and Chile achieved middle-income status during the 1960s and the first half of the 1970s. However, from the 1980s onward, they entered a prolonged period of crisis due to political and social instability. Many Latin American countries found themselves in a 'middle-income trap' during the 1990s, marked by financial and economic crises, high unemployment, and widespread poverty. Argentina, Uruguay and Brazil have significant labor inequalities in the formal and informal sectors (Martín-Artilles, Chávez-Molina and Semenza 2021: 51). Persistent issues such as income inequality, poverty, unemployment, and frequent regime changes continue to fuel social unrest and economic instability (Wu and Fang 2024). Income inequality is not only a problem for South America but for all of Latin America,

which remains the most unequal region in the world. In Latin America, the richest 10% of the population holds 22 times the income of the poorest 10%, which is double the average in industrialized countries (Busso and Messina 2020). This is a structural problem, highlighting the persistent cycle of job and wage loss for those at the bottom of the income distribution.

Figure 2. The difference between the unemployment rates and the average in Eight South American countries.

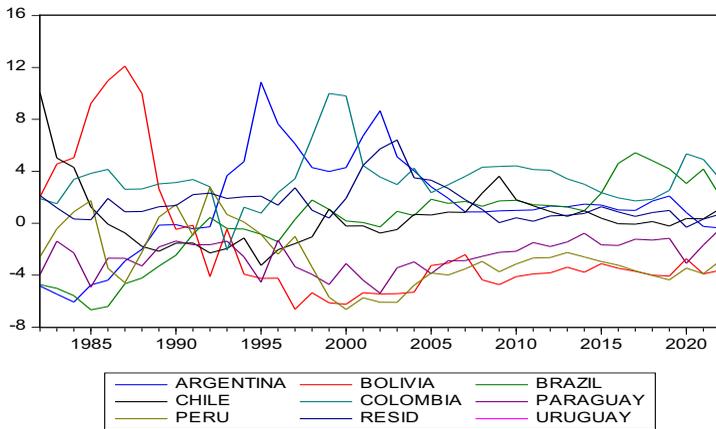
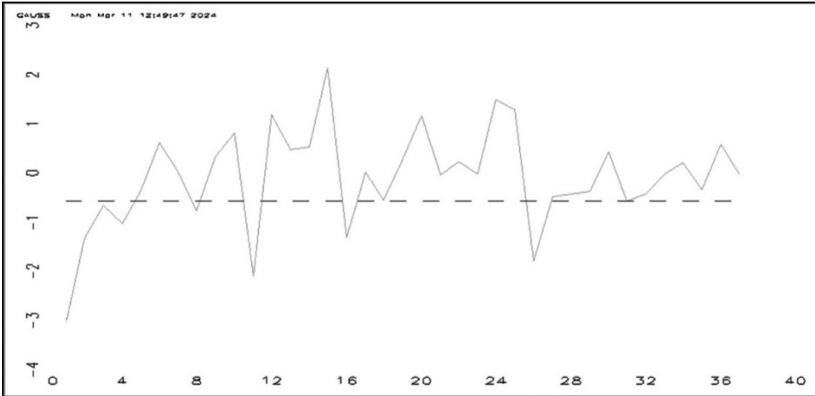


Figure 3 presents the TAR estimation graph, highlighting the periods associated with each regime, the threshold value, and the transition variable for the South American countries analyzed. The graph shows that Regime II predominated across the study period from 1982 to 2022, with the exception of the years 1993 and 2005.

Figure 3. Threshold of the Eight South American Countries



— Threshold variable refers to Chile with $d=1$ - - - - - Threshold

Note: The horizontal line represents the threshold (-0.5781). The threshold variable is Chile ($d=1$).

Convergence in unemployment rates across eight South American countries occurred during different periods under the two regimes. In the first regime, convergence was observed during 1982-1987, 1993-1994, 1998, and 2009, whereas under the second regime, it took place during 1988-1992, 1995-1997, 1999-2008, and post-2010 periods. Among the reasons for this divergence is the significant increase in unemployment rates, by more than three percentage points in countries such as Argentina, Bolivia, and Colombia, due to the financial crises experienced in the 1990s. However, other countries witnessed comparatively minimal increases in unemployment rates. Colombia persisted with high levels of unemployment and reached its peak in 2000. As identified by Lora and Márquez (1998), despite high growth rates and moderate increases in labor supply in Latin America during the 1990s, high unemployment rates prevailed. Unemployment rates remained low in countries where they were previously low and continued to be high in countries where they were initially high. Throughout crisis periods, the informal sector became a fundamental characteristic of labor markets in certain South American countries.

5. Conclusion

Labor markets in South America have been experiencing increases in unemployment and informal employment. The quantity and quality of jobs created in the region have changed because of slowing growth, high inflation, and the worsening global crisis intensified by Russia's attack on Ukraine. In this study, Evans and Karras' (1996) approach, extended nonlinearly by Beyaert and Camacho (2008), is used to test real convergence in unemployment rates across eight South American countries for the period 1982-2022. This approach employs a threshold model, nonlinear panel unit root tests, and bootstrap critical values to test convergence. Thus, by incorporating nonlinearities, a convergence analysis accounts for serial correlation and cross-sectional dependency correction (Tipoy 2019). The TAR method proposed by Beyaert and Camacho (2008) for convergence and divergence decision making is also a method for detecting unit roots in a series. The results obtained primarily indicate that shocks to the differences between unemployment rates and the regional average in both regimes are temporary. It is understood from the study that, except for minor deviations in the 1980s and 1990s under the first regime, the second regime has been dominant, especially from the 1990s onwards. Both regime periods are characterized by debt and financial crises in Latin America.

Second, the possibility of convergence in unemployment rates across eight South American countries is investigated for both regimes. Our findings confirm the existence of convergence in both regimes; however, conditional convergence is observed in the first regime. In other words, while countries converge to a common stationary state in the second regime, each country converges to its individual stationary state in the first regime. The results demonstrate that the response of unemployment to structural problems in the region is similar for at least eight South American countries. Labor market challenges are among the fundamental development issues in Latin American countries. In this regard, overcoming structural unemployment issues is crucial for the development of regional collaborations and the adoption of common employment policies. Unemployment in the region is particularly affected by the rural population, and government regulations remain weak (Ball, Roux and Hofstetter 2013). Thus, the dynamics of unemployment in the eight considered South American countries are similar due to demand-driven downturns. Another finding of this study is that the difference between unemployment rates and the average is nonlinear.

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Appendix

Code	Fund Name	Portfolio Size
AIS	Ak Portfolio Rental Certificates Participation Fund	246,436,103.96
CPU	Active Portfolio Technology Participation Fund	594,552,619.53
CVK	Inveo Portfolio Multi-Asset Participation Fund	305,264,598.49
DPK	Deniz Portfolio Lease Certificates Participation (TL) Fund	155,128,338.99
EKF	Qinvest Portfolio Rental Certificate Participation (TL) Fund	100,191,462.56
FBC	Foneria Portfolio Participation Fund	144,138,813.32
FCK	Foneria Portfolio Multi-Asset Participation Fund	75,476,120.39
FFH	Qnb Finans Portfolio Multi-Asset Participation Fund	435,585,298.87
GKF	Global Md Portfolio Participation Fund	45,001,756.43
GLS	Azimet Portfolio Lease Certificates (Sukuk) Participation Fund	71,839,074.96
GOL	Garanti Portfolio Gold Participation Fund	106,217,251.49
GPF	Garanti Portfolio First Participation Fund	141,506,352.13
IAT	Iş Portfolio Rental Certificates Participation (TL) Fund	176,888,046.97
KCV	Kuveyt Turk Portfolio Multi-Asset Participation Fund	623,577,813.23
KIS	Qinvest Portfolio Lease Certificate Participation (Exchange) Fund	151,993,195.75
KLU	Kuveyt Turk Portfolio Money Market Participation (TL) Fund	13,264,354,033.38
KMF	Azimet Portfolio Precious Metals Participation Fund	614,805,451.95
KNJ	Kuveyt Turk Portfolio Energy Participation Fund	184,309,333.93
KSK	Azimet Portfolio Second Lease Certificates Participation Fund	24,600,190.82
KSR	Kuveyt Turk Portfolio Sustainability Participation Fund	485,942,202.39
KTJ	Kuveyt Turk Portfolio Technology Participation Fund	155,944,229.66
KTM	Kuveyt Turk Portfolio First Participation (TL) Fund	259,596,494.20
KTN	Kuveyt Turk Portfolio Lease Certificates Participation (TL) Fund	138,751,529.23
KTV	Kuveyt Turk Portfolio Short-Term Rental Certificates Participation (TL) Fund	5,926,370,868.53
KUT	Kuveyt Turk Portfolio Precious Metals Participation Fund	873,718,669.67
KZL	Kuveyt Turk Portfolio Gold Participation Fund	17,126,910,682.33
MPF	Active Portfolio Short-Term Rental Certificate Participation (TL) Fund	318,991,088.19
MPK	Active Portfolio Lease Certificate Participation (TL) Fund	143,099,865.17
NJY	Nurod Portfolio First Participation Fund	9,243,379.86
OGD	Oyak Portfolio Gold Participation Fund	468,757,227.84
PDD	Qinvest Portfolio Participation Fund	76,313,681.54
PKF	Ata Portfolio Gold Participation Fund	263,772,334.38
RBA	Albaraka Portfolio Bereket Foundation Support Gold Participation Fund	498,250,970.92
RBK	Albaraka Portfolio Participation Fund	99,824,598.05
RBT	Albaraka Portfolio Rental Certificates Participation Fund	14,439,338.37
RBV	Albaraka Portfolio Short-Term Rental Certificates Participation (TL) Fund	1,488,976,836.10
RJG	Re-Pie Portfolio Gold Participation Fund	41,186,090.59
TCA	Ziraat Portfolio Gold Participation Fund	5,546,439,178.64
TPZ	Teb Portfolio Lease Certificates (Currency Exchange) Participation Fund	451,708,503.50
VFK	Ziraat Portfolio Second Short-Term Rental Certificates Participation (TL) Fund	1,631,136,080.35
YCY	Istanbul Portfolio Lease Certificates Participation Fund	41,517,931.94
YFV	Yapi Kredi Portfolio Lease Certificates Participation Fund	120,934,871.66
ZPF	Ziraat Portfolio Participation Fund (Exchange)	1,945,765,960.94
ZPG	Ziraat Portfolio Lease Certificates (Sukuk) Participation Fund	373,504,825.84
	Total Participation Fund Portfolio Size in Turkey	55,962,963,297.04

4

MARKET CONCENTRATION: THE CASE OF WOOD AND WOOD PRODUCTS INDUSTRY IN TÜRKİYE

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Abstract

The wood and wood products industry ranks among the key resources utilized by humans to meet housing, heating, and food needs. Encompassing industries such as lumber and parquet manufacturing, particleboard and fibreboard production, veneer and plywood manufacturing, and wooden construction, the wood and wood products sector holds substantial importance due to its interrelation with numerous other industries. These include the furniture sector, forestry, adhesive and chemical production, sawmills and carpentry, paper manufacturing, construction, decoration, timber trade, petroleum products trade, automotive, energy, profile manufacturing, forest-village cooperatives, cement production, metal industry, paint/varnish/insulation materials, and door and window joinery and fittings. The study analyses the market structure and competition level of the wood and wood products industry for the period of 2012-2023 using concentration indices (CR_4 , CR_8 , HHI, HTI, RI, CCI, EI). The findings reveal that market concentration in the sector decreased between 2012 and 2018 but showed an upward trend in the post-2018 period. Notably, in 2021, market concentration reached its peak, leading to a decline in competition. The increase in concentration indicates that the influence of large firms in the market has grown, while the competitive power of smaller firms has diminished.

Keywords: Concentration Indices, Wood and wood Products Industry, Türkiye.

Jel Codes: D40, D43

1. Introduction

Wood and wood products are among the primary resources used by humans to meet their housing and heating needs. Currently, approximately 2.5 billion people worldwide rely on forest products for their daily heating and cooking needs, with nearly half of the wood obtained from forests being utilized for energy purposes (Ministry of Agriculture and Forestry of the Republic of Türkiye, 2020: 7). On the other hand, advancements in production methods and the diversification of needs have led to the discovery of various ways to utilize wood and wood products. While unprocessed wood is primarily used as firewood, processed wood has over 6,000 applications (Depişgen, 2018: 1).

In this context, the wood and wood products encompass industries such as the lumber and parquet industry, particleboard (chipboard) and fibreboard (MDF) industry, veneer and plywood industry, and wooden construction industry. Furthermore, the industry is closely linked to various other industries, including the furniture sector, forestry, adhesive and chemical production, sawmills and carpentry, paper industry, construction sector, decoration, timber trade, petroleum products trade, automotive industry, energy, profile manufacturing, forest-village cooperatives, cement production, metal industry, paint/varnish/insulation materials, as well as door and window joinery and fittings industries (Depişgen, 2018: iv-v).

Trees harvested from forests are subject to various classifications for industrial use. In certain studies (Depişgen, 2018: 15), forest products are categorized into two groups: wood-based products (primary forest products derived from the tree through various stages and processes, such as logs, utility poles, mining poles, industrial wood, pulpwood, fibreboard and chipboard wood, stakes, rods, and firewood) and non-wood forest products (resin, pine torchwood, bay laurel, boxwood, root wood, thyme, sage, pine nuts, mushrooms, and various plant bulbs). In other studies (Bakır, 2019: 6-7), forest industries are grouped into three categories: primary manufacturing industry (e.g., sawmill industry, panel industry including veneer, plywood, blockboard, particleboard, and fibreboard, as well as pulp and paper industries), secondary manufacturing industry (e.g., production of parquet, joinery, furniture, prefabricated houses, utilizing the raw and semi-finished products of the primary manufacturing industry), and other forest products industries (e.g., musical instruments, shoe molds, wooden toys,

wood-turned products, pencil industry). In Türkiye, approximately 70% of lumber production in the wood-based group is used in construction, 20% in furniture, and 10% in packaging and other sectors, with annual per capita lumber consumption ranging between 75 and 85 dm³ (ACI, 2017: 3).

An analysis of the distribution of Türkiye's agricultural land reveals that, in 1988, 20.2 million hectares (48.16%) of the total 41.9 million hectares of agricultural land were forested. By 2023, the total agricultural land had decreased to 38.6 million hectares, while forested land had expanded both in absolute terms (23.4 million hectares) and proportionally (60.54%) (TSI, 2024a). Globally, the countries with the largest proportional forest areas include the Russian Federation, Brazil, Canada, the United States, and China, collectively accounting for nearly half of the world's total forest area (Depişgen, 2018: 14, 27).

The history of Türkiye's wood products industry dates back to the 1200s, driven by the production of agricultural tools such as barrels, carts, plows, and forks, as well as small handicrafts. However, the industry remained limited to sawmills powered by water and human labour until the late 1800s. The first industrial-scale lumber factory was established in İstanbul in 1892, but the number of such facilities reached only 33 by 1938 (Yıldırım and Emiroğlu, 2022: 156; Ağaç-İş Union, 2024: 1). The industry experienced significant growth following the planned development period initiated in 1963 (Şahin, 2013: 26). As of 2022, the number of firms operating in Türkiye's wood and wood products industry was 25,016 (TSI, 2024b). While a significant portion of these are small enterprises, only 10 are among the largest 1,000 firms in the country (İCI, 2024). Consequently, the industry displays a structure characterized by a small number of leading firms and a large number of follower firms. This structure, while related to the diverse manufacturing areas within the industry, underscores the necessity for market concentration and competition analysis. Considering this structure, the study aims to analyse the market concentration and competition level in Türkiye's wood and wood products industry for the 2012-2023 period using concentration indices.

2. The Wood and Wood Products Industry: Its Importance for the World and Türkiye

The wood and wood products industry, which is classified in NACE.2 sector classification as Group 16: "Manufacture of wood, wood products, and cork products (excluding furniture); manufacture of articles of straw, plaiting materials, and similar materials" (SATSO Trade Portal, 2024), is among the significant industries worldwide. As of 2023, the global trade volume for wood and wood products reached \$315.9 billion. In the same year, global exports of wood and wood products amounted to \$154.7 billion. China ranked first in exports with \$17.4 billion (11.22%), followed by Canada and Germany with \$13.4 billion and \$11.1 billion, respectively (Table 1). The top five exporting countries accounted for a combined share of 37.37% of global exports. Türkiye, with \$1.8 billion in exports, ranked 26th in the world's wood and wood products export rankings in 2023. Global imports of wood and wood products in 2023 were valued at \$161.1 billion. The United States ranked first with \$24.9 billion in imports (15.48%), followed by China and Japan with \$17.7 billion and \$10.2 billion, respectively. Türkiye imported \$1.1 billion worth of wood and wood products, accounting for 0.7% of global imports, and ranked 29th. The top five importing countries collectively accounted for 43.95% of the global wood and wood products import market.

Table 1: Global Wood and Wood Products Trade in 2023 (million \$)*

		Export				Import	
		Value	Ratio (%)			Value	Ratio (%)
1	China	17,359.7	11.22	1	USA	24,936.9	15.48
2	Canada	13,448.9	8.69	2	China	17,748.2	11.02
3	Germany	11,124.8	7.19	3	Japan	10,176.3	6.32
4	USA	9,563.9	6.18	4	Germany	9,567.4	5.94
5	Russian Fed.	6,324.4	4.09	5	UK	8,384.5	5.20
	Total	57,821.8	37.37		Total	70,813.3	43.95
26	Türkiye	1,787.7	1.16	29	Türkiye	1,129.1	0.70
	World	154,739.1	100.00		World	161,125.4	100.00

* It is prepared by aggregating the groups listed in the Trade Map dataset: 44 - 'Wood and articles of wood; wood charcoal'; 45 - 'Cork and articles of cork'; and 46 - 'Manufactures of straw, esparto, or other plaiting materials; basketware and wickerwork'.

Source: Trade Map, 2024.

According to FAO (2024) data, China ranks first in global wood-based panel production with an output of 165.8 million m³, followed by the United States (31.4 million m³), the Russian Federation (16.9 million m³), and India (15.4 million m³). Türkiye ranks fifth globally, producing 12.9 million m³ of wood-based panels. A detailed examination of Türkiye's wood product production reveals that the total production, which was 38.4 million m³ in 2012, increased by 36.2% to reach 52.3 million m³ by 2023 (Table 2). This growth underscores the industry's sustained importance and continuous production increase over time. In 2023, production data show that coniferous wood for pulpwood, round and split ranked first with 8.4 million m³, accounting for 16.2% of total production. This was followed by coniferous sawlogs and veneer logs (6.7 million m³; 12.7%), medium/high-density fibreboard (MDF/HDF) (6.5 million m³; 12.3%), coniferous sawnwood (6.2 million m³; 11.8%), and particleboard (5.8 million m³; 11.0%).

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Table 2: Türkiye Wood Products Production Quantities (thousand m³)

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Pulpwood, round and split, coniferous (production)	4,734	5,406	6,100	6,883	6,913	5,839	6,803	6,900	7,650	10,400	10,400	8,448
Sawlogs and veneer logs, coniferous	6,176	5,259	5,400	6,377	6,847	7,006	7,393	7,400	7,150	9,226	8,613	6,652
Medium/high density fibreboard (MDF/HDF)	3,900	4,285	4,885	4,777	5,069	4,747	4,910	4,910	4,775	4,850	6,250	6,450
Sawnwood, coniferous	4,307	4,184	4,285	5,102	5,819	5,605	5,915	5,915	6,975	6,920	6,450	6,150
Particle board	3,875	4,225	4,425	4,361	4,202	4,286	4,355	4,355	4,075	5,675	5,625	5,770
Pulpwood, round and split, non-coniferous (production)	2,679	2,409	3,100	2,637	2,786	2,855	4,608	4,600	5,065	4,438	5,368	4,921
Sawnwood, non-coniferous	2,375	2,221	2,350	2,670	2,680	2,511	2,290	2,290	2,400	4,273	3,520	3,275
Wood fuel, non-coniferous	2,496	2,404	2,400	2,842	3,045	2,880	3,286	3,300	3,067	2,071	3,357	3,099
Wood fuel, coniferous	1,762	1,692	1,900	1,792	2,502	2,463	2,402	2,450	2,330	2,045	2,239	2,068
Sawlogs and veneer logs, non-coniferous	3,688	3,444	3,650	3,337	3,153	3,139	2,860	3,000	2,641	5,697	4,428	1,625
Wood residues	850	850	850	850	850	850	850	850	850	500	550	1,277
Other industrial roundwood, coniferous (production)	364	202	250	558	644	584	734	730	730	1,292	964	900
Plywood and LVL	116	116	150	116	120	105	112	112	96	600	620	649
Wood chips and particles	850	365	316	320	130	130	130	130	120	450	500	525
Veneer sheets	85	84	85	87	270	74	74	74	74	393	394	389
Oriented strand board (OSB)	75	75	75	75	80	75	75	75	75	75	75	75
Other industrial roundwood, non-coniferous (production)	60	42	35	216	46	39	68	70	70	79	66	5
TOTAL	38,394	37,265	40,258	43,002	45,158	43,190	46,867	47,163	48,126	58,986	59,221	52,279

Parallel to the global development of the industry, its importance within the Turkish economy has been steadily increasing. When examining its historical development, the production of wood and wood products, which was 447.71 billion TL in 2009, reached 10.28 trillion TL by 2022, accounting for 1.47% of the total manufacturing industry production (Table 3). An analysis of the share of the wood and wood products industry within total manufacturing industry production reveals that this share has fluctuated between 1.22% and 1.49%, with an average of approximately 1.41%.

Table 3: Production Values: the Turkish Manufacturing Industry and the Wood and Wood Products Industry

	Manufacturing Industry (million TL)	Wood and Wood Products Industry (million TL)	Ratio (%)
2009	447,711	6,368	1.42
2010	538,842	7,744	1.44
2011	712,234	9,699	1.36
2012	771,754	11,340	1.47
2013	866,169	12,267	1.42
2014	996,977	14,669	1.47
2015	1,116,847	16,406	1.47
2016	1,220,497	17,803	1.46
2017	1,574,831	*	*
2018	2,103,805	27,412	1.30
2019	2,365,544	28,936	1.22
2020	2,837,875	37,134	1.31
2021	4,886,488	72,697	1.49
2022	10,277,520	150,950	1.47

** In accordance with the provision of the Turkish Statistics Law No. 5429 regarding confidential data, information has not been provided due to either the number of enterprises being fewer than three, or the presence of one or two dominant enterprises in cases where the number of enterprises is three or more. This is to prevent the arithmetic extraction of information pertaining to confidential enterprises. The concealed sector data are shown in terms of the totals of three- or two-digit sector codes and in the national totals.*

Source: TSI, 2024b.

The number of firms operating in the Turkish wood and wood products industry continuously decreased from 25,810 to 22,146 during the 2009-2020 period, but increased again in 2021 and 2022, reaching 25,016 (Table 4). When examining the share of the number of firms in the industry within the total number of firms in the manufacturing industry, it is observed that the share, which was 8.03% in 2009, steadily declined until 2022, reaching 5.38%.

Furthermore, the increase in the number of firms in the wood and wood products industry in 2021 and 2022 was below the average when compared to the manufacturing industry as a whole. A similar trend is evident when analysing the share of employees in the industry within total manufacturing industry employment. Specifically, the number of employees in the industry increased from 67,364 in 2009 to 102,226 in 2022. However, during the same period, the share of sectoral employment within total manufacturing industry employment decreased from 2.53% to 2.04%.

Table 4: Number of Firms and Employees: the Turkish Manufacturing Industry and in the Wood and Wood Products Industry

Number of Firms	Manufacturing Industry	Wood and Wood Products Industry	Ratio (%)	Number of Employees	Manufacturing Industry	Wood and Wood Products Industry	Ratio (%)
2009	321,482	25,810	8.03	2009	2,660,009	67,364	2.53
2010	326,925	25,572	7.82	2010	2,865,482	71,563	2.50
2011	335,571	25,444	7.58	2011	3,150,290	77,375	2.46
2012	354,256	25,759	7.27	2012	3,436,295	83,240	2.42
2013	365,723	25,195	6.89	2013	3,642,332	84,531	2.32
2014	371,911	23,943	6.44	2014	3,826,777	86,589	2.26
2015	375,480	23,201	6.18	2015	3,908,510	86,694	2.22
2016	379,894	23,026	6.06	2016	3,922,221	85,758	2.19
2017	391,024	23,207	5.93	2017	4,018,741	87,340	2.17
2018	396,118	22,727	5.74	2018	4,133,611	87,243	2.11
2019	403,018	22,323	5.54	2019	4,084,281	81,492	2.00
2020	409,482	22,146	5.41	2020	4,308,474	84,550	1.96
2021	444,030	24,570	5.53	2021	4,711,078	95,822	2.03
2022	464,797	25,016	5.38	2022	5,000,191	102,226	2.04

Source: TSI, 2024b.

When examining the foreign trade data of the wood and wood products industry, it is observed that the industry's export value increased from 749.1 million dollars (0.49%) in 2013 to 1.78 billion dollars (0.74%) in 2023 (Table 5). In this context, the industry's share in Türkiye's total manufacturing exports has increased by approximately 50%. On the other hand, when examining the import data of the industry, it is seen that it decreased from 1.47 billion dollars (0.72%) in 2013 to 1.05 billion dollars (0.36%) by the end of 2023. As a result, the industry, which was a net importer in 2013, has become a net exporter since 2018. This situation largely indicates an increase in domestic production of products such as wood-based panels (MDF, HDF, and particle board) that were previously imported. Moreover, while Türkiye was a net importer of 543.6

thousand m³ in 2013, it has risen to a net exporter position of 2.5 million m³ by 2023. Furthermore, the foreign trade balance of industrial timber used in the production of these products has improved from -671.4 thousand m³ to -46.4 thousand m³, while the foreign trade balance of wood chips, particles, and residues has improved from -5.25 million m³ to -0.91 million m³ (FAO, 2024). As a result, while the import volumes of certain products have decreased, the export volumes of products requiring industrial and large-scale production methods have increased.

If Türkiye's foreign trade in the wood and wood products industry by subcategories is examined, it is observed that the highest trade occurs in the 44- "Wood and wood products; charcoal" group. As of 2023, Türkiye has made an export of 1.77 billion dollars in this group, of which 173.9 million dollars (9.80%) was exported to Iraq. Following Iraq, Morocco and Libya accounted for 6.14% and 4.70% of the exports, respectively. Other important countries include Bulgaria, Romania, Georgia, Canada, Tunisia, Serbia, and the United States. When analysing the import value for 2023, it is found that 23.94% (262 million dollars) of the total 1.09 billion dollars in imports came from the Russian Federation. The United States and Ukraine follow Russia with shares of 12.45% and 9.71%, respectively. Other key trade partners include China, Romania, Belarus, Latvia, Germany, Cameroon, and Italy (Trade Map, 2024).

Table 5: Foreign Trade: the Turkish Manufacturing Industry and in the Wood and Wood Products Industry (thousand \$)

Export	Manufacturing Industry	Wood and Wood Products Industry	Ratio (%)	Import	Manufacturing Industry	Wood and Wood Products Industry	Ratio (%)
2013	151,483,194	749,109	0.49	2013	206,177,970	1,474,480	0.72
2014	156,497,790	883,081	0.56	2014	196,775,936	1,405,647	0.71
2015	142,267,945	759,272	0.53	2015	173,110,265	1,398,548	0.81
2016	140,346,020	716,966	0.51	2016	170,959,108	1,198,760	0.70
2017	154,698,118	775,773	0.50	2017	195,865,975	1,064,030	0.54
2018	167,064,019	833,165	0.50	2018	184,463,129	779,286	0.42
2019	171,218,582	892,504	0.52	2019	162,143,182	389,986	0.24
2020	159,952,830	966,088	0.60	2020	179,808,651	420,689	0.23
2021	212,809,018	1,457,142	0.68	2021	205,983,976	466,629	0.23
2022	240,377,635	1,766,763	0.73	2022	261,114,645	717,325	0.27
2023	240,912,121	1,775,755	0.74	2023	292,079,849	1,045,054	0.36
2024*	203,730,533	1,434,974	0.70	2024*	230,638,763	721,581	0.31

* First 10 months

Source: TSI, 2024c.

Considering the sectors related to the wood and wood products industry, along with employment and foreign trade data for these sectors, it is evident that the importance of the industry would continue to increase in the future. Moreover, the industry makes significant contributions to industries such as construction, furniture, iron and steel, and transportation (Şahin, 2016: 181).

3. Concentration Indices: Theoretical Framework

There are various measurement methods used in the literature for market structure and market power analysis. These methods can be grouped into structural models (such as the SCP paradigm, the Efficiency Hypothesis, and the Relative Market Power Hypothesis), non-structural models (the New Empirical Industrial Organization (NEIO) approach, including models such as Iwata model, Panzar-Rosse model, and Bresnahan-Lau model), and concentration indices. When comparing these models, each has its advantages and disadvantages; however, concentration indices are the most preferred and widely used method due to their ease of calculation and the generally available data required for computation (Demirel and Hatırlı, 2019: 446; Sarıdoğan, 2021: 69).

Concentration indices are methods used to measure the level of competition and determine market structure by considering the share of firms operating in the industry in terms of production, sales, capacity, or employment. Although there are numerous concentration indices in the literature, the different measurement methods used in these indices mean that each index has distinct advantages under varying conditions. Since each index has its own unique advantages, it is common in the literature for multiple indices to be calculated, with results evaluated collectively (Demirel, 2014: 60-61).

In the literature, several indices are used, including the k-Concentration Ratios (CR_k), Herfindahl-Hirschman Index (HHI), Hall-Tideman Index (HTI), Rosenbluth Index (RI), Horvath Comprehensive (Industrial) Concentration Index (CCI), Entropy Index (EI), Hannah and Kay Index (HKI), U Index (U), Hause Indices (H_m and H_a), and the Gini Concentration Index. On the other hand, due to data availability and ease of calculation, the most commonly used indices are the CR_k and HHI indices (Sarıdoğan, 2021: 70-71).

k-Concentration Ratio (CR_k): In the literature, one of the most commonly preferred indices due to data availability and ease of calculation is the k-Concentration Ratio (CR_k). This index provides the total market share of the k firms with the highest market shares among n firms operating in the market:

$$CR_k = \sum_{i=1}^k S_i \quad 0 \leq CR_k \leq 1 \quad S_1 \leq \dots \leq S_k \leq \dots \leq S_n \quad (1)$$

In the equation, k represents the number of firms to be considered in market concentration, n is the total number of firms operating in the industry, and S_i represents the market share of the ith firm. Theoretically, firms with the highest market share are preferred for k, and there is no definitive rule for determining the value of k (Saridoğan, 2021: 70). On the other hand, in the literature, values of 4 and 8 are generally preferred for k. When the index is calculated absolutely, it ranges between 0 (perfect competition) and 1 (monopoly); when calculated as a percentage, it can take values between 0 and 100. Values of CR_k below 30 indicate low concentration and competition; values between 30 and 50 indicate moderate concentration and monopolistic competition; values between 50 and 70 suggest high concentration and an oligopolistic structure; and values above 70 points to very high concentration and a monopolistic structure (TSI, 2017; Ediz and Önder, 2019: 27).

Herfindahl-Hirschman Index (HHI): Another commonly used index in the literature is the Herfindahl-Hirschman Index (HHI). The index was proposed by Hirschman (1945) and developed by Herfindahl (1950) (BAT, 2012: 84; Önder, 2016: 196). Unlike the CR_k, HHI takes into account all the firms operating in the market.

$$HHI = \sum_{i=1}^n S_i^2 \quad (2)$$

In the equation, n represents the total number of firms operating in the market, and S_i represents the market share of the ith firm. When the index is calculated as a percentage, it ranges from 0 (perfect competition) to 10,000 (monopoly). For values between these two extremes, different opinions exist (Table 6). As the value increases, competition decreases, and the market structure moves away from perfect competition and approaches to monopolistic market structure.

Table 6: Market Structures according to HHI Index: Different Opinions

	According to BAT, 2012: 85	According to 1982 "Merger Guidelines"	According to 2010 "Revised Horizontal Merger Guidelines"
Low Concentration - Competitive Market	HHI < 1.000	HHI < 1.000	HHI < 1.500
Moderate Concentration - Monopolistic Competition	$1.000 \leq \text{HHI} < 1.200$	$1.000 \leq \text{HHI} < 1.800$	$1.500 \leq \text{HHI} < 2.500$
High Concentration - Oligopoly	HHI ≥ 1.200	HHI ≥ 1.800	HHI ≥ 2.500

Source: BAT, 2012: 85; Pehlivanoglu and Tekçe, 2013: 375; Demirel, 2023: 287.

Hall-Tideman Index (HTI) and Rosenbluth Index (RI): The Hall-Tideman Index (HTI) was developed by Hall and Tideman (1967), and the Rosenbluth Index (RI) was developed by Rosenbluth (1961). In both indices, the market shares of firms are weighted based on their ranking in terms of market share. The main difference between these two indices lies in the ranking methodology: the HTI ranks firms from largest to smallest and gives more weight to the market shares of smaller firms, while the RI ranks firms from smallest to largest and gives more weight to the market shares of larger firms. The weighting of the indices causes the calculated index values to change when new firms enter the market or when firms exit, as the weights of the existing firms adjust accordingly. In this regard, the HTI and RI indices differ from the CR_k and HHI indices and are calculated using Equation 3.

$$HTI \text{ and } RI = ((2 \sum_{i=1}^n iS_i) - 1)^{-1} \quad (3)$$

In the relevant equation, n represents the total number of firms operating in the market, i indicates the ranking of the firms, and S_i refers to the market share of the i^{th} firm. Both the HTI and RI indices take values between 0 (perfect competition) and 1 (monopoly).

Comprehensive Concentration Index (CCI): The Comprehensive Concentration Index (CCI) was developed by Horvath (1970) and is calculated by considering the market share of the firm with the highest market share (S_1), along with the square of the market shares of the other firms (S_i^2), weighted by

the remaining firms' market shares $(1 - S_i)$. The formula for the index is $(\sum_{i=2}^n S_i^2 (1 + (1 - S_i)))$, where the squared market shares of the firms other than the leader are weighted by their remaining market shares. The reason it is called "comprehensive" is that it includes the leader firm's market share (S_1) and the weighted market shares of other firms. The CCI index is calculated using Equation 4.

$$CCI = S_1 + \sum_{i=2}^n S_i^2 (1 + (1 - S_i)) \quad (4)$$

In the equation, S_1 represents the market share of the leading firm with the highest market share, and S_i denotes the market share of the i^{th} firm. The index can take values between 0 (perfect competition) and 1 (monopoly). The CCI is notable because it considers both the relative distribution and the absolute size, meaning it does not overlook the influence of small firms on the market, nor does it minimize the impact of large firms due to their effect on the distribution (Bikker and Haaf, 2002: 63).

Entropy Index (EI): The term "entropy," the name of the index, was first used by R. Clausius in 1865 in the fields of physics and thermodynamics and later by C.E. Shannon in 1948 for measuring information and uncertainty (Shu-Cherng and Tsao, 2001: 12-13). The entropy index was initially introduced by Theil (1967) and later developed by Horowitz and Horowitz (1968). The index is calculated by multiplying firms' market shares (S_i) with the \log_2 of those shares ($\log_2 S_i$) and summing these values.

$$EI = - \sum_{i=1}^n S_i \log_2 S_i \quad (5)$$

The lower the index value, the higher the concentration, and it can take values between 0 (monopoly) and $\log_2 n$ (perfect competition with an infinite number of firms of equal size in the market) (Ediz and Önder, 2019: 28-29; Sarıdoğan, 2021: 72). As the market shares of firms (S_i) become closer to each other, the index increases, market concentration decreases, and competition increases; as the number of firms (n) increases, the index also increases, market concentration decreases, and competition rises (Horowitz and Horowitz, 1968: 197-198).

4. Literature Review

The term "concentration index" was first used by Means in 1939 (Marfels, 1971: 486). In the industrial organization (IO) literature, there are three groups of indices: those that determine the average firm size, those that measure inequality (or distribution), and those that measure concentration, with concentration indices being the most widely used (Rosenbluth, 1955: 58-62). Given the prominence of structural models in the literature and the significance of concentration indices within these models (BAT, 2012: 79), the importance of concentration indices becomes clearer. In this context, selected international and national studies after 2010 that use concentration indices, with the main assumption that "an increase in concentration reduces competition" (Bikker and Haaf, 2000: 4), are presented in Table 7 and Table 8, respectively.

*Table 7: Selected Studies Using Concentration Indices: International Studies **

Author(s) and Publication Year	Period, Country, and Sector	Method	Findings
Pulaj (Brakaj) and Kume, 2013	2003-2012, Albania, Construction sector	CR ₄ , HHI, Gini coefficient	According to the results of CR ₄ , HHI, and the Gini coefficient, it was found that the concentration in the construction sector was low.
Trung, 2015	2004-2013, Vietnam, Banking sector	Panzar-Rosse, CR ₄ , HHI	It was determined that the sector had a highly concentrated structure, although it showed a declining trend.
Olah et al., 2019	2017-2018, Hungary, Information and communication sector	HHI	It was found that the highest revenue in the sector was earned by communication service providers, with the top 5 firms in terms of HHI accounting for 40.6% of the total sector share, and only one firm (0.1%) having a market share above 20%.
Silva et al., 2019	2016-2017, USA, Pulp and paper sector	HHI, Translog cost function	It was determined that there was a moderate level of oligopsony power in all markets, and that firm density and local company size significantly impacted market power in the pulp market.
Khodadadkashi, Noraniyazad and Gorji, 2020	1995-2013, Iran, Manufacturing sector	Panzar-Rosse model, CR ₄ , HHI	The Panzar-Rosse model indicated that monopolistic competition prevailed in the sector, while CR ₄ and HHI showed that the market was highly concentrated, though showing a declining trend.
Pasalic and Pavic, 2021	2016-2020, Global, Personal computer manufacturing sector	CR ₄ , HHI	An oligopolistic market structure was identified for the 2018-2020 period. Additionally, it was determined that personal computer manufacturers were less able to use their market power due to the influence of mobile phones and tablets.
Serban, Cristes and Stoenuiu, 2021	2015-2019, Romania, Insurance sector	CR ₄ , HHI	In the life insurance sector, concentration was higher compared to other insurance sectors, and the market structure was identified as a strong oligopoly. In other insurance sectors, moderate competition was observed until 2019, when it turned into a strong oligopoly.
Zarrah, Widiyasti and Josman, 2022	2010-2019, Indonesia, Commercial banking sector	Panel data analysis, CR ₄ , HHI	The analysis revealed that the HHI value was above 2,500, and CR ₄ was between 0.4 and 0.6, indicating that the banking sector operated under oligopolistic conditions.
Moustafa, 2024	2018-2023, Egypt, Investment fund market	CR ₄ , HHI	In the study, the CR ₄ and HHI indexes were found to be 0.26 and 0.03 on average, respectively, indicating low concentration in the investment fund market.
Rachmawati et al., 2024	October 2020, Indonesia, Hospital sector	CR ₄ , HHI	The study found that the share of state hospitals was still high (51.4%), but nationally, CR ₄ was still below 40%, indicating high competition. However, in some cities, due to the limited number of hospitals, CR ₄ was high, and the market structure was oligopolistic.

* Reproduced from Demirel, 2023: 289-292 Table 6 together with some additions.

*Table 8: Selected Studies Using Concentration Indices: National Studies **

Author(s) and Publication Year	Period, Country, and Sector	Method	Findings
Günlü, 2011	2008, Burdur, Raw milk marketing	CR ₄ , CR ₈ , HHI, EI, CCI	It was determined that the firm concentration ratio in raw milk marketing in Burdur province was high (CR ₄ = 78.54%; CR ₈ = 92.11%; HHI = 0.60; EI = 0.22; CCI = 0.23), and the existing structure was significantly close to oligopsonistic market characteristics.
Kaynak and Ari, 2011	2003-2010, Automotive sector	CR ₄ , CR ₈ , HHI	For the year 2010, the CR ₄ = 94.1 and HHI = 0.30 for domestic passenger cars; CR ₄ = 46.3, CR ₈ = 65.1, and HHI = 0.07 for imported passenger cars; CR ₄ = 96.5, CR ₈ = 99.8, and HHI = 0.34 for domestic light commercial vehicles; and CR ₄ = 62.2, CR ₈ = 81.0, and HHI = 0.12 for imported light commercial vehicles were determined. Therefore, according to the CR ₄ index, monopolistic competition was dominant in the domestic passenger and domestic light commercial vehicle markets, while the imported light commercial vehicles market exhibited an oligopolistic structure. According to the HHI index, monopolistic competition prevailed in the domestic passenger and domestic light commercial vehicle markets, while a competitive market structure was observed for the imported passenger and light commercial vehicle markets.
Pehlivanoglu and Tekçe, 2013	1993-2011, Electricity market	CR ₄ , CR ₈ , HHI	According to both CR ₄ and CR ₈ , as well as the HHI index, it was determined that concentration was high to very high, and the market structure was a strong oligopoly.
Akardeniz and Kıraç, 2015	2013, Gaziantep, Technical textiles market	CR ₄ , HHI	The CR ₄ value for Gaziantep non-woven firms was found to be 83%, indicating an oligopolistic market structure, and the HHI value of 1,209 indicated a strong oligopoly.
Kostakoğlu, 2015	2011-2014, Internet service providers market	CR ₄ , CR ₈ , HHI, EI	High concentration was found in the internet service provider market (CR ₄ = 97.22%; CR ₈ = 99.81%; HHI = 6,434.89; EI = 382.89), but it was observed that concentration exhibited a decreasing trend over time.
Sarıbaş and Tekiner, 2015	2011-2013, Civil aviation sector	CR ₂ , CR ₄ , HHI	According to CR ₂ , CR ₄ , and HHI values, the market showed a high degree of concentration, and the market share of the top two firms increased over the studied period.
Kahvecioğlu and Atar, 2016	2013-2014, Cardiovascular medical devices sector	CR ₄ , CR ₈ , CR ₁₂ , HHI	According to CR ₄ analysis, the market exhibited an oligopolistic structure, which strengthened during 2013-14. HHI analysis showed that the market structure, which was less concentrated in 2013, became highly concentrated in 2014.
Kaynak, 2016	2005-2015, Pharmaceutical sector	CR ₄ , CR ₈ , HHI	In the Turkish pharmaceutical sector, concentration was low according to CR ₄ and CR ₈ . However, when the sector was classified as Turkish and foreign-owned, concentration increased, leading to an oligopolistic structure. On the other hand, according to the HHI index, concentration was not high in either subcategory.

Önder, 2016	1997-2014, Biscuit, chocolate, and confectionery sector	CR ₄ , CR ₈ , HHI, EI, RI	According to CR ₄ and CR ₈ indices, there was a high degree of concentration in the sector, and the market structure transitioned from an oligopoly to monopolistic competition by the end of the examined period. According to HHI, RI, and EI indices, a market structure between monopolistic competition and oligopolistic competition was observed.
Hazar et al., 2017	1988-2000 and 2004-2015, Banking sector	CR ₅ , CR ₇ , CR ₁₀ , HHI, HTI, RI, HKI, HM, EI	The study concluded that, in terms of active, credit, deposit, equity, profit, and branch shares, there was an increase in concentration among banks after the crisis, and the market dominance of large banks had risen.
Yaşar et al., 2017	2012-2015, Domestic air transport	CR ₄ , HHI	The study concluded that, for the five airports analysed, the CR ₄ index indicated a near-monopoly market, while the HHI index showed a near-oligopoly structure for İzmir Adnan Menderes and Antalya airports in passenger transport, and a near-monopoly structure for all other airports.
İldırar and Kırıl, 2018	2004-2017, Automotive sector	CR ₄ , CR ₈ , HHI	According to CR ₄ , CR ₈ , and HHI indices, the domestic passenger and light commercial vehicle markets were close to monopolistic competition, while the imported passenger and light commercial vehicle markets showed a more competitive structure.
Tatlı, 2018	2005-2015, White appliances sector	CR ₄ , CR ₈ , HHI, EI, HKI, Gini coefficient	All indices indicated a high level of concentration in the sector, and the market was found to operate under oligopolistic conditions
Ediz and Önder, 2019	2006-2016, Beverage manufacturing sector	CR ₄ , CR ₈ , HHI, EI, HTI, RI, CCI	All indices calculated for the Turkish beverage sector were consistent, showing high firm concentration and an oligopolistic market structure.
Apan, 2020	2007-2018, Real estate investment trusts sector	CR ₄ , CR ₈ , HHI	During the period 2007-2011, the market exhibited an oligopoly structure close to a monopoly, while in 2012-2018, an oligopoly structure prevailed.
Serel and Akşehirli, 2020	1999-2019, Banking sector	CR ₄ , HHI	The study found that the CR ₄ and HHI indices for the submarkets of active size, credit and receivables, deposits, branch count, and staff size ranged from 40%-60% and 200-999, respectively, indicating that the sector generally exhibited (weak or strong) oligopolistic characteristics.
Çiğner and Kinay, 2021	2013-2019, Audit services market	CR ₄ , CR ₈ , HHI	It was determined that market concentration increased over the studied period, with the market structure moving away from competitive conditions and towards an oligopolistic structure.
Sarıdoğan, 2021	2013-2019, IT sector	CR ₃ , CR ₄ , HHI, EI, HKI, GI	Based on the analysis of 17 firms in 2019, the results were CR ₃ = 39.03; CR ₄ = 44.05; HHI = 0.19; EI = 1.89; HKI = 5.23; GI = 0.82, showing moderate concentration according to CR ₃ , CR ₄ , and HHI. According to EI, HKI, and GI, concentration in the sector fluctuated and decreased.
Bitrak, 2023	2012-2021, Non-bank financial institutions	CR ₄ , CR ₈ , HHI, EI, RI, HTI, HKI, CCI	The number of non-bank financial institutions showed a fluctuating decrease, followed by a continuous increase in the last five years. According to the calculated concentration indices, the sector exhibited low concentration and market structures fluctuating between monopolistic competition and oligopoly.

* Reproduced from Demirel, 2023: 289-292 Table 6 together with some additions.

When evaluating the literature on market concentration and market structure in the context of international studies, it is observed that applied studies using concentration indices are particularly concentrated in the manufacturing (paper

pulp, computers), finance (banking, insurance, investment funds), and other (construction, information-communication, healthcare) sectors. If the literature is analysed in the context of national studies, applied works are again concentrated in the manufacturing (automotive, energy, textiles, food, white goods), finance (banking, real estate investment trusts, audit services, non-bank financial institutions), and services (raw milk marketing, healthcare products and pharmaceutical marketing, internet service provision, civil aviation, IT) sectors. In terms of methodology, it is observed that the most frequently used indices in both national and international studies are CR_k and HHI, with the inclusion of HTI, RI, HKI, EI, and CCI indices alongside these two.

On the other hand if the literature is examined specifically in terms of the wood and wood products sector, no studies have been determined. In this regard, the study is expected to fill a gap in the literature and make a contribution.

5. Empirical Application

5.1. Data Set

In the analysis of market structure and competition, the most commonly used methods in the literature are structural models and, in particular, concentration indices. In this context, the scope of the study focuses on calculating the market concentration of the Turkish wood and wood products industry and determining its market structure. To this end, 'Net Sales' data of firms in the 'NACE 16 - Manufacture of Wood, Wood Products, and Cork (excluding furniture)' category from the 'Top 500 Industrial Enterprises in Türkiye' and 'Second Top 500 Industrial Enterprises in Türkiye' databases published by the İstanbul Chamber of Industry (İCI, 2024) were used to calculate the CR_4 and CR_8 concentration ratios; Herfindahl-Hirschman Index (HHI); Hall-Tideman Index (HTI) and Rosenbluth Index (RI); Comprehensive Concentration Index (CCI) and Entropy Index (EI). Although data for the years 2009-2023 are published in both databases, no firm operating under the relevant NACE category was included in these databases between 2009-2011, and therefore, the calculations considered the 2012-2023 period.

5.2. Empirical Application Results

The number of firms operating in the industry during the 2012-2023 period and the firms included in the list of the top 1,000 largest industrial enterprises, along with the concentration index values calculated for these firms, are presented in Table 9.

*Table 9: Wood and Wood Products Industry: Number of Firms and Market Concentration Indices **

	Number of Firms	CR ₄	CR ₈	HHI	HTI	RI	CCI	EI
2012	11	0.81	0.93	2,558.23	0.212	0.032	0.57	2.51
2013	11	0.78	0.92	2,460.36	0.201	0.032	0.56	2.58
2014	12	0.75	0.89	2,262.79	0.177	0.033	0.53	2.73
2015	12	0.77	0.91	2,221.81	0.185	0.033	0.52	2.73
2016	13	0.71	0.88	1,803.44	0.159	0.034	0.46	2.99
2017	15	0.70	0.84	1,664.15	0.138	0.035	0.44	3.16
2018	15	0.70	0.84	1,701.64	0.139	0.035	0.44	3.13
2019	11	0.78	0.94	2,233.14	0.199	0.032	0.53	2.67
2020	12	0.78	0.92	2,140.35	0.190	0.033	0.51	2.75
2021	9	0.85	0.98	3,000.19	0.260	0.031	0.61	2.27
2022	10	0.80	0.96	2,432.81	0.220	0.030	0.55	2.53
2023	10	0.82	0.96	2,645.41	0.230	0.030	0.58	2.44

**Indices are calculated by the author by using the data of İCI, 2024.*

If Table 9 is examined, it can be seen that the number of firms in the relevant NACE activity sector was 11 in 2012, increased steadily to 15 in 2017-2018, but then declined again, reaching 10 in 2022-2023. It is observed that the number of firms in the industry and market concentration are inversely related, as evidenced by the CR₄, which represents the ratio of the net sales of the top 4 firms to total sales in the market. Furthermore, while there was a decrease in the number of firms entering the indices between 2012 and 2018, market concentration (CR₄) decreased from 0.81 in 2012 to 0.70 in 2018. Since 2019, with the decline in the number of firms, market concentration has increased, and in 2023, the CR₄ index rose to 0.82. The highest market concentration (CR₄ = 0.85) during the 2012-2023 period occurred in 2021, while the lowest index (CR₄ = 0.70) was observed in 2017 and 2018. Therefore, it can be stated that concentration has been high throughout the examined period. On the other hand, in 2017 and 2018, the market structure was at the boundary of oligopoly

and monopoly, while in all other years, it indicated a monopolistic structure. Additionally, in 2021, the market share of the top two firms was 72.2% (%47.6 + %24.6), and in 2023, it was 69.3% (%41.9 + %27.4). In these high shares, the largest firm's share was significantly high, and it can be argued that the other firms were followers of the market leader. A similar trend is observed for CR₈, where the ratio, which was 0.93 in 2012, decreased to 0.84 until 2017-2018, and then started to rise again, reaching 0.96 in 2023. In fact, in 2021, the market share of the top 8 firms was as high as 98%.

In the calculation of the CR₄ and CR₈ indices, only the top 4 and 8 firms are considered. However, when the Herfindahl-Hirschman Index (HHI), which takes into account the market share of all firms operating in the market, is considered, it has been determined that the trend observed in CR₄ and CR₈ is also present in the HHI. Specifically, the index, which was 2,558 in 2012, steadily decreased to 1,664 in 2017, and then rose to 2,645 by 2023. The highest HHI index was calculated as 3,000 in 2021. When the indices are interpreted in light of the revised "Horizontal Merger Guidelines" of 2010, it is evident that the wood and wood products industry exhibited high concentration and an oligopolistic structure in 2012, 2021, and 2023, while in all other years, it demonstrated moderate concentration and characteristics of a monopolistic competition market.

The calculation methods are the same, but when the HTI (from largest to smallest) and RI (from smallest to largest) indices, which rank firms in different orders, are evaluated together, it is observed that during the 2012-2023 period, HTI first decreased and then increased, while RI first increased and then decreased. Therefore, considering the HTI, the market shares of relatively small firms initially decrease and then increase. On the other hand, when the RI is considered, the market shares of relatively large firms first increase and then decrease. As a result, the HTI index values indicate that market concentration first decreased and competition increased, followed by an increase in market concentration and a decrease in competition. The year with the highest concentration and the lowest competition, which is consistent with CR₄, CR₈, and HHI, is determined to be 2021.

When the CCI index values are examined, it is observed that during the 2012-2018 period, the index followed a downward trend (from 0.57 to 0.44), while

from 2019 onwards, it showed an upward trend, reaching 0.58 in 2023. As with other indices, the highest index value was recorded in 2021, at 0.61. As a result, according to the CCI index, market concentration in the industry first decreased and competition increased, followed by a rising trend in concentration and a decrease in competition.

The final index calculated for the industry is the EI (Entropy) index, which can take values between 0 and $\log_2 n$, and as the index value approaches 0, it indicates a monopolistic structure. When the calculated index values are considered, it is observed that the index, which was 2.51 in 2012, increased until 2017 (reaching 3.16), and then decreased to 2.44 in 2023. The lowest value, 2.27, occurred in 2021. As a result, in line with other indices, it is observed that during the 2012-2017 period, concentration decreased and competition increased; while from 2018 onwards, concentration continued to decrease, and competition diminished.

When the calculated concentration indices are evaluated as a whole, all indices (CR_4 , CR_8 , HHI, HTI, RI, CCI, and EI) indicate that concentration decreased and competition increased during the 2012-2018 period; whereas after 2018, concentration increased, and competition decreased. The year in which concentration was highest, and competition was lowest across all indices is identified as 2021. When considering CR_4 values, it is observed that the industry had a monopolistic structure except for the years 2017 and 2018. In contrast, when HHI values are considered (with reference to the revised 2010 "Horizontal Mergers Guidelines"), it is found that an oligopolistic structure prevailed in 2012, 2021, and 2023, while a monopolistic competition structure prevailed in other years. On the other hand, when the HHI index is interpreted with respect to the BAT, 2012: 85, or the 1982 "Merger Guidelines," it can be stated that the industry has an oligopolistic structure.

6. Conclusion

The wood and wood products industry, classified under group 16 in the NACE.2 classification as 'Manufacture of wood, wood products, and cork (excluding furniture); manufacture of baskets, mats, and similar products made from reed, straw, and other materials,' has been examined within the context of Türkiye. The market concentration, level of competition, and market structure in this

industry is studied. In this context, 'Net Sales' data of firms in the 'NACE 16 - Manufacture of wood, wood products, and cork (excluding furniture)' category from the 'Top 500 Industrial Enterprises in Türkiye' and 'Second Top 500 Industrial Enterprises in Türkiye' databases published by the İstanbul Chamber of Industry (İCI) have been used to calculate the CR₄ and CR₈ concentration ratios; Herfindahl-Hirschman Index (HHI); Hall-Tideman Index (HTI) and Rosenbluth Index (RI); Comprehensive Concentration Index (CCI); and Entropy Index (EI).

When the calculated concentration indices are evaluated as a whole, it is determined that in the first half of the examined period (2012-2018), concentration decreased, and competition increased; while in the second half (2018-2023), concentration increased, and competition decreased. Moreover, with the exception of the years 2017 and 2018, the CR₄ index indicates a monopolistic structure, and the HHI suggests monopolistic competition and oligopolistic structures. The results of the HTI, CCI, and EI indices also support these findings on concentration and competition, indicating that in the first part of the period, concentration decreased, and competition increased; while in the second part, concentration increased, and competition decreased. The decreasing competition leads to a shift away from a perfect competition market, characterized by high production levels and low prices, towards oligopolistic and monopolistic markets with low production levels and high prices. This situation, while potentially increasing profits for firms, could also lead to price increases due to the large share of the two largest firms in market sales, which could result in the exit or bankruptcy of small and medium-sized (follower) firms, potentially creating the conditions for predatory pricing practices. In the long term, predatory pricing could lead to a reduction in the number of small and medium-sized firms and an increase in market share of large firms. In this context, it is believed that competition authorities should closely monitor the industry to prevent consumers from being harmed by high prices and reduced competition, as well as to ensure the survival of small and medium-sized enterprises.

In the study, data from the İCI's 'Top 500 Industrial Enterprises in Türkiye' and 'Second Top 500 Industrial Enterprises in Türkiye' were used. Since only the largest firms in the industry can be included in this database, the exclusion of small and medium-sized enterprises represents the major limitation of the study. This also creates a need for future research to calculate concentration indices on

a more granular basis. Future studies conducted at the sub-segment level would ensure more accurate measurements and the formulation of more effective policies.

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5

THE ECONOMIC POTENTIAL AND MARKET DYNAMICS OF MUSLIM- FRIENDLY TOURISM IN SRI LANKA: A CASE STUDY ON MUSLIM-FRIENDLY SUSTAINABLE TOURISM

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Abstract

The economic potential and market dynamics of Muslim Friendly Tourism (MFT) to Sri Lanka, specifically focusing on Economic Sustainability, is one of the important pillars of sustainable tourism. While there is a growing demand for Muslim-friendly tourism in the world, Sri Lanka has not utilized its full potential as far as this form of tourism is concerned. These objectives are pinpointed as seeking out opportunities, challenges, and strategies to promote Sri Lanka as a better destination for economic sustainable development. From the perspective of the qualitative case study design, data is obtained from semi-structured interviews conducted with industry-wide stakeholders, which have been complemented through secondary sources emanating from literature reviews and market reports. The study's outcomes point to six broad, but distinct themes; namely, 1) Market Dynamics, 2) Attractions and Preferences, 3) Barriers and Challenges, 4) Economic Potential, 5) Sustainable and Ethical Practices, and 6) Role of Digital Innovation. From this study, it is evident that despite the temptation that both cultural and natural attractions provide to Muslim travellers, Sri Lanka, however, lacks competitive edges in the developing MFT market owing to infrastructural and promotional inadequacies. If the challenges are met with an appropriate framework within targeted marketing, greater halal certification and sustainable practices, then it has the potential to stir the tourism economy in Sri Lanka.

Keywords: Barriers and Challenges, Economic Sustainability, Halal Certification, Muslim Friendly Tourism (MFT), Sustainable Tourism.

1. Introduction

The tourism sector, particularly Islam-oriented tourism in Sri Lanka, is becoming popular. This can be attributed to Sri Lanka's diverse culture, beautiful nature, and its historical relations with Muslim populations. Geographically, and throughout history, when the Middle Eastern and Persian Muslim traders were dominant, Sri Lanka had the singular advantage of being a centre for spice, and cinnamon, as well as being strategically located on the maritime trade route, it easily became one of the essential trade hubs. However, this historical encounter resulted in a while assimilating experience, which has now turned into an island-wide culture, this is evident in the large numbers of halal restaurants, mosques, and Islamic institutions in other nations (Hashim et al, 2018). Its geomorphological peculiarities, including stunning Pacific coastlines, hill country and wildlife reserves, along with the islands' tropical climatic temperateness are potentially fascinating features among Muslim holidaymakers who are family-oriented and seek leisure. Not to mention, the availability of halal standards and measures in the region only further reinforces Sri Lanka's attractiveness as a niche market (Battour & Ismail, 2016).

Recently, it is notable that Sri Lanka is starting to utilize its Muslim-friendly potential to take advantage of the potential offered by the global Muslim tourism industry, which was over USD 189 billion in 2021 alone (Crescentrating & Mastercard, 2021). Because tourism, by its nature, has a supply structure that requires high investments (Karhan and Yenisehirlioglu, 2019). The nation presents its clients with a variety of alternatives, including boutique Muslim private hotels, the Red Mosque located in Colombo, and Kattankudy's Islamic properties. However, factors such as the demand for infrastructural improvements such as private lodging and more halal certification have been widely cited as barriers. Despite these challenges, the Islamic moral values of support for social sustainability and community strengthening, among others, give Sri Lanka a good ground to build on the existing Muslim-friendly tourism industry which is in line with good practices from Economic Sustainability.

The present research aims at understanding the economic potential and market dynamics of Muslim-friendly tourism in Sri Lanka, and particularly mapping its importance with the economic development of the tourism industry in Sri Lanka. The work is intended to evaluate the strategies on which Sri Lanka must capitalize to become positioned as a Muslim Friendly destination for attracting and servicing the burgeoning market segment of Muslim travellers.

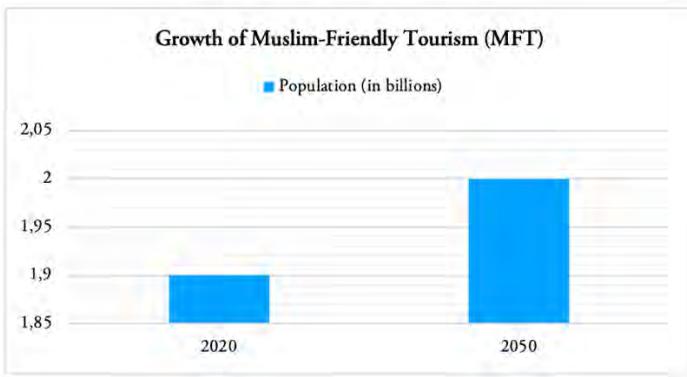
Global Muslim-friendly tourism demand is evidenced to be growing. Unfortunately, Sri Lanka has been vastly under-explored regarding its full potential for attracting Muslim tourists. Due to a lack of strategic attention on the aspect of infrastructural deficiencies, failure to market halal-certified services, and the absence of enough insight into the market, Sri Lanka still does not have access to this lucrative segment. Unless these structural fallouts are addressed, one cannot say that Sri Lanka is at all likely to become a competitively Muslim Friendly destination while diversifying its tourist economy.

The study of *The Economic Potential and Market Dynamics of Muslim-Friendly Tourism in Sri Lanka: A Case Study on Muslim-Friendly Sustainable Tourism* is an effort to develop economic sustainability through MFT. In this study, the introduction is concerned with Islamic-oriented tourism in Sri Lanka, the Current situation and the global context of the MFT. After a background reveal of the study, the literature review focused on the economic contribution of MFT in the global market, the growth of MFT and an Overview of Muslim travel trends in the Global Market: In the case of Malaysia. When it comes to the method of the research it clarifies about data set concerned for the study and the methodology for the study. The result of the study focused on six various themes analyzed and at the end of the study it provided key recommendations and findings.

2. Literature Review

MFT, which is also referred to as Muslim Friendly Tourism (MFT), refers to a new trend in tourism which weaves into the weave of Islamic value systems certain components of traditional tourism activities to fulfil the needs of specific Muslim tourists. Facilities that provide services according to Islamic specifications include offering halal-certified food, having easy access to prayer facilities, imposing dress codes that show modesty, and offering environments

free from alcohol consumption (Battour & Ismail, 2016). One fundamental MFT theory is based on an inclusive approach that will easily accommodate Muslim travellers to continue observing their religious and cultural performances in leisure activities. This concept is not only a response to the growing demand from the global Muslim population, which is projected to exceed 2 billion by 2050, but also a strategic market response to a lucrative segment that contributed over USD 189 billion to the global economy in 2021 (Crescentrating & Mastercard, 2021).



Source: *Pew Research Center. (2017)*

MFT goes beyond the facility provision aspect into sustainable and ethical practices that are enshrined in Islamic values. For example, Islamic concepts such as *Tayyib* and *Ihsan* suggest an environment-sensitive practice coupled with ensuring the well-being of the community and the preservation of culture (Razzaq et al., 2016). Muslim-friendly tourism also overlaps with experiential tourism in that it provides the traveller with opportunities to connect to culturally rich, spiritually significant, and socially responsible destinations (Jafari & Scott, 2014). With leading countries in innovation for Muslim Friendly Tourism (MFT), such as Malaysia, their practices provide a theoretical model that destinations like Sri Lanka should follow to achieve inclusive and sustainable tourism development catered to the Muslim market.

As per the data provided in the chart, it reveals that there will be considerable growth for Muslim-friendly tourism in the global market. Accordingly, the 1.9

billion global population will be increased up to 2 billion by 2050. It reveals that there will be a huge demand for MFT in the global market. Based on that background this study refers to the economic potential and market dynamic for MFT in the Sri Lanka Tourism market.

Overview of Muslim travel trends in the Global Market: In the case of Malaysia

Malaysia's position as a leading Muslim Friendly Tourism (MFT) destination is supported by its diverse multicultural environment and strategic geographical location. Among the countries contributing to tourist arrivals, India leads with 43,973 visitors. The diverse demographic provides Malaysia with an opportunity to attract travellers from different backgrounds, especially from Muslim-majority nations. This ability of the country to cater to the needs of such a diverse audience strengthens its appeal as a destination for Muslim-friendly tourism.

Malaysia has indeed become a beacon of hope for the Muslim population worldwide that seeks to be a halal-compliant travel destination. Apart from guaranteeing very dependable certification processes, Malaysia is known for making available prayer facilities, and halal foods, and immersing itself into a culturally sensitive environment, which makes it even more appealing to Muslim tourists. All these pointers make Muslims comfortable with their stay and feel at home, thus making Malaysia one of the most sought-after destinations by halal-conscious travellers. The literature states that robust infrastructural development for halal is a significant driver in boosting tourism from Muslim-majority countries (Henderson, 2016).

Culturally and religiously, Malaysia has some of the most prominent attractions one can think of. It's an Islamic country that lives its culture of diversity in such a way that the Muslim visitor would have the "wow" experience. There are monument mosques, Muslim museums, and cultural festivals worth celebrating that denote Malaysia's hyper-modern concern with keeping up Islamic customs and traditions. Also, these venues encourage experience and space for spiritual development and cultural interchange and learning (Zailani et al., 2019).

The Malaysian government actively promotes Muslim Friendly Tourism (MFT) through special initiatives and marketing. One such campaign, "Visit Truly Asia," has been successful in garnering international attention to Malaysia as a

country leading in the provisions of Muslim Friendly Tourism (MFT). In addition, support from the government in the development of the industry has been able to create a trustworthy and attractive destination for Muslim visitors. Tourism Malaysia 2021.

Strategically positioned in Southeast Asia, Malaysia draws beneficiaries from its proximity to neighbours who contribute a great deal towards its tourist arrival statistics. As such, the geographical benefit of accessibility increases its potential ability to attract regional tourists. Added to this is the continuous growth in the Muslim population across the world and the developing demand for Muslim Friendly Tourism (MFT); this opens more vistas for redefining tourism in Malaysia and meeting the needs of this growing market (Mastercard-CrescentRating, 2021).

These principles of sustainable tourism practice in Malaysia conform to an ethical paradigm for many Muslim tourists. By committing to integrating environment conservation and community welfare in tourism development initiatives, Malaysia is expressing responsible tourism which could offer the type of experience sought by meaningful travellers whose values vibrate with it (Razak et al., 2020). More so, Malaysia is of rich cultures that also respond to the coalescing phenomenon of experiential tourism that is growing steadily among Muslims. Here is indeed a travel type that deepens the link with heritage and spirituality, thereby enriching the travel experience (Jaafar et al., 2017).

MFT is the type of tourism that is influencing economic development in Sri Lanka. This, however, has emerged at a time when Sri Lanka tourism is seen in a lot of diversifications and tapping into the Muslim travel market for this emerging segment. It much strengthens Sri Lanka's historical and cultural resource base, rich in and from thousands of years of history associated with Muslim traders who would be well attracted to come to the country in search of Muslim Friendly experience and facilities. The market of global Muslim Friendly Tourism (MFT) is probably going to expand in size and value over the years ahead, with estimates suggesting that it will reach an incredible USD 300 billion by 2026 (Crescentrating & Mastercard, 2021). If Sri Lanka improves its attractiveness for this market segment, it will result in more foreign direct investment, arrivals, and, consequently, sectoral growth in the hospitality, food and beverage, and transportation sectors. This diversification is of the essence,

considering the recent economic challenges; hence, reliance on traditional tourism markets may not be sustainable.

Muslim Friendly Tourism (MFT) would extend beyond the direct economies of members and could thus have a wider socio-cultural development dimension for an MFT destination like Sri Lanka. As Karhan (2016) stated, the relationship between economic growth and tourism expansion affects both sides positively. This would enable diversification and inclusivity to give understanding of Islamic practices, therefore inputs for a more tolerant, diverse society, a must for long-term stability and growth in the country. This development would also stimulate businesses such as halal food production and Islamic heritage tourism, which would create job and income opportunities for members of the community at large (Razzaq et al., 2016). Sustainable and halal tourism practices, when integrated, could indeed add value to tourism in Sri Lanka, enriching it for all travellers and not essentially Muslims, through environmental conservation and community empowerment (Battour & Ismail, 2016). Therefore, MFT will ultimately prove important for economic development as well as for social and environmental sustainability within Sri Lanka.

3. Method

3.1. Data Set

Data analysis will be carried out with thematic analysis, which is very well used to recognize, analyze and report the patterns (themes) that occur in qualitative data. They are meant to cluster the data under meaningful headings reflecting the participants' views on Muslim-friendly tourism and the degree of importance that this defines for the economic development in Sri Lanka. Thematic analysis will pose several stages: becoming familiar with the data, conducting the coding of the data to define key themes, reviewing the themes for accuracy and relevance, defining and naming those themes, and finally reporting the findings (Braun & Clarke, 2006). This systematic approach will enable the researcher to derive nuanced insights that are both descriptive and interpretative. Accordingly, six key themes analyzed in this study can be identified as 1) Market Dynamics, 2) Attractions and Preferences, 3) Barriers and Challenges, 4) Economic Potential, 5) Sustainable and Ethical Practices, and 6) Role of Digital Innovation.

3.2. Methodology

This study utilizes a qualitative research design. Specifically, using a case study approach, the potential economic effect of Muslim-friendly tourism will be examined along with its market dynamics within the Malaysian market, as relates to Sri Lanka. This case study method will be suitable for this research since it enables the in-depth study of a specific context in which Sri Lanka's tourism sector operates, particularly concerning the special needs and preferences that Malaysian Muslim travellers might have. This process will help the research to obtain rich, contextual insights about the various impediments, challenges, and opportunities in the market by gaining a comprehensive understanding of the phenomenon being investigated (Yin, 2018).

This study is partly dependent on semi-structured interviews with selected key stakeholders in the Sri Lankan tourism industry, including tourism operators, hotel managers, and cultural experts. This technique also brings flexibility since the interview can allow the participants to express their views and experiences in relation to Muslim-friendly tourism. The research will widely use secondary sources from literature reviews, industry reports, and market studies to provide information background and validate findings from interviews. Consolidating both primary and secondary data increases the level of analysis and ensures that there is an understanding of market dynamics (Creswell, 2014).

The justification of the research methodology is that the research intends to probe the perceptions and experiences of stakeholders in the context of Sri Lankan tourism. Qualitative methods, particularly interviews, are well-suited for capturing the complexity and nuance that are often lost in quantitative methods sole reliance on numbers. Contextually, the case study design allows research findings to link with a modality of Muslim-friendly tourism, thus guiding targeted recommendations for practitioners and policymakers. Moreover, combining interviews and thematic analysis adds to a comprehensive understanding of the economic potential of Muslim Friendly Tourism (MFT), as well as the challenges confronting Sri Lanka in this highly competitive marketplace (Yin, 2018; Creswell, 2014; Braun & Clarke, 2006).

4. Results

Key findings from this study have brought forward six themes that are very critical in understanding the dynamics of Muslim-friendly tourism in Sri Lanka, about the Malaysian market. The market dynamics also bring outsource markets and demographic insights that highlight family-oriented travel as a prime constituent for Malaysian tourists. Preferencing and Attractions refer to the natural and cultural attraction elements, appealing to an Islamic traveler and how Islamic values would guide such decisions and preferences in destinations. Political and infrastructural matters castigate barriers and challenges preventing the growth of Muslim Friendly Tourism in the region. Whereas the theme of economic potential studies the spending pattern of Muslim tourists and indicates revenue opportunities for Sri Lanka's tourism sector, the sustainability and ethics discussion dovetail Islamic values with responsible tourism and demands tourism practices to embrace community empowerment and environmental conservation. Finally, the importance of digital innovation theme added up illustrates how technology and social media can be used to benefit Muslim travellers, stating that such improvement can be made by exploiting digital platforms to push for Sri Lanka's visibility and attractiveness as a Muslim Friendly destination. These themes combined thus create a very good, comprehensive framework to analyze the chances and challenges that Sri Lanka is presenting toward being one of the leading players in the Muslim Friendly Tourism market.

Market Dynamics

As such, Muslim-friendly tourism markets in Sri Lanka have a significant potential market base, particularly from source markets in the Middle East and South Asia. Tourists from Malaysia, for example, comprise a big segment of this market, travelling on average in family groups and requesting as many Muslim Friendly amenities as possible. Interviews with key stakeholders showed that many Malaysian travellers travel in a family group, from very young children to senior members, and often look for experiences that can cater to the needs of all. This demographic insight suggests that Sri Lanka has to have tourism products that address the needs of families with larger accommodation, diverse dining, and activities suitable for all age groups. Furthermore, the increasing interest of Middle Eastern markets, especially from Saudi Arabia and the UAE, points to a wider trend in which Muslim travellers favour destinations that are in line with

their cultural and religious values, hence increasing the need for Sri Lanka to position itself as a Muslim Friendly destination effectively.

Attractions and Preferences

The conclusion is that natural or cultural attractions influence the destinations chosen by Muslim travellers. For example, virgin coastlines, beautiful green plantations, and wildlife reserves - all attributes that entice Muslim visitors to Sri Lanka during holiday seasons for recreational-adventure purposes. The cultural attractions, like historical mosques and Islamic heritage sites, also play a significant role in the choice of destination, with travellers expressing a wish to experience the culture and history of the place. Islamic values seem to be put front and centre in this tourism, where most of the respondents mention the importance of having available halal food, prayer facilities, and an environment appealing to modesty. Compliance with Islamic principles not only gives added value to the whole journey of Muslim tourists but also provides them with a comfortable and secure environment, which makes Sri Lanka an attractive option for people who intend to continue with their religious customs while exploring new destinations.

Barriers and Challenges

However, there is more about the barriers and challenges of Muslim-friendly tourism in Sri Lanka. There are political and communal problems in general, usually associated with ethnic tensions, which have created a bad perception among possible Muslim travellers, even as far back as after events of violence and unrest. Such events have made a certain segment of the market wary of visiting Sri Lanka since, to this date, safety and security remain the most critical issues to be attended to by Muslim tourists. Furthermore, major infrastructural deficiencies are challenges, as tourist facilities are mainly non-halaal certified and do not provide vital services for their Muslim customers. With inadequate quantity of halal food, prayer rooms, and family-oriented accommodations, the country would not maximize its capability to compete in the burgeoning Muslim-Friendly Tourism (MFT) markets.

Economic Potential

Islamic tourism has great economic potential for countries like Sri Lanka, particularly regarding spending habits attributable to Muslim tourists. Reports say that Muslim travelers, particularly those from the Middle East and Malaysia, love spending money and prefer really good experiences as well as services. This spending behaviour presents a lucrative opportunity for the tourism sector, including increased revenue for hotels, restaurants, and local attractions. The stakeholders said, "By tapping into the Muslim Friendly Tourism (MFT) market, Sri Lanka would significantly increase its overall tourism revenue, offering economic benefits not only for the hospitality industry but also for local businesses and communities involved in the tourism supply chains.". The focus on high-value market opportunities is in line with Sri Lanka's need to diversify its tourism portfolio and dependence on traditional markets.

Sustainability and Ethical Practices

Sustainability and ethics have increasingly been considered important components of Muslim Friendly Tourism (MFT). It appears that Islamic principles and sustainable tourism practices are aligned, and many Muslim travellers put a high value on eco-friendly and responsible travel options. It was also highlighted by stakeholders that community empowerment and environmental conservation should be part of the tourism experience. By integrating these principles into its offerings, Sri Lanka can position itself as a leader in sustainable Muslim Friendly Tourism (MFT), appealing to a growing segment of environmentally conscious Muslim travellers. Additionally, responsible tourism practices could be promoted, such as handling waste and supporting local communities, to enrich the overall appeal of Sri Lanka as a destination that shows respect for both cultural and ecological values.

Role of Digital Innovation

The role of digital innovation in attracting Muslim travellers is already becoming quite significant. These findings indicate that technology, especially social media, is a major influencer in travel decisions among many Muslim tourists. According to the stakeholders, better digital marketing strategies would increase awareness of Sri Lanka as a Muslim Friendly destination by showcasing available amenities

and attractions. Tech-enabled solutions could include the development of apps that highlight restaurants, accommodations, and prayer facilities with halal certification, and social media campaigns targeting Muslim audiences. Sri Lanka will leverage technology not only to attract more Muslim travellers but also to make their travel experience better and have their needs and preferences met during their journey.

5. Conclusion

The study brings out evident opportunities for Muslim-friendly tourism in Sri Lanka from the Malaysian market. Important findings include that family travel, cultural sights, and a focus on halal are some of the factors increasingly influencing Malaysian travellers. Political instability, poor infrastructure and limited promotion bring about deterrents to the development of this sector. Yet, all these challenges do not hinder the economic potential because Muslim tourists are known to have a high intake in their spending and usually prefer sustainable tourism, following Islamic norms.

Recommendations for Policymakers

The policymakers in Sri Lanka should work on creating a strategic framework for its positioning as an attractive Muslim Friendly destination. It must detail guidelines about halal certification processes whereby customers can fully rely on guarantees of meeting expectations while consuming food and using hospitality services. Moreover, government involvement would also be necessary for promotional activities aimed at bringing out to the global stage the uniqueness of Sri Lanka's offer of Muslim-friendly tourism especially to the Malaysian and Middle Eastern markets. This can go as far as establishing partnerships with Malaysian travel agencies and influencers in broadening reach and authenticity, thereby building more credibility. Infrastructural development to improve transport accessibility to tourist places, as well as prayer facilities in public spaces, will be further joined by the efforts to make the environment more Muslim-friendly (Battour et al., 2017). It does not just enhance tourism but builds overall economic resilience in the country.

Instructions to Tourism Operators and Hospitality Stakeholders

Tourism operators must reorient the facilities available for stakeholders in the hospitality industry in terms of the preferences of a Muslim traveller. This includes any food item that the traveller consumes, which must be made available in a halal state. It must provide reasonable accommodation, and privacy, and family-friendly amenities. Such training also applies to staff being culturally sensitive and knowledgeable in Islamic practices that would greatly increase the experiences of the guest (Razzaq et al., 2016). The stakeholders will also have to consider the use of digital platforms to market their services using mobile applications and social media to target the Muslim traveller. A good strong online presence through halal certifications, cultural experiences, and customer testimonials could make a huge impact on the travel decision. Aligning services with the values and expectations of Muslim tourists will ensure that the stakeholders tap into this growing sector of the market for economic growth in this part of the region.

Findings

Contribution to the Field of Tourism Studies

This research adds to a major part of tourism studies in the comprehension of the dynamics of Muslim Friendly Tourism (MFT) and the economic implications thereof on developing countries like Sri Lanka. Amidst the background of increased global tourism, this study shows how cultural sensitivity and ethics are also going to help in tourism development; more so, the practical implications to policymakers and industry stakeholders serve as another opportunity for improving the viability of Muslim-friendly tourism and enrich academia further with more discourses regarding sustainable tourism strategies.

Limitations and Directions for Future Research

Such a major discovery finds at least some limitations within qualitative research, particularly as it pertains to interviewing for data collection. The result also confines geographical boundaries since it is primarily Sri Lankan in the Malaysian market, and thus cannot at best be made to generalize across the board in different settings. Quantitative methods might be developed for estimation on broader

scales that have their economic benefits more clearly defined by future research in Muslim-friendly tourism.

There is still further need in future research for qualitative experiences and perceptions of Muslim travellers, as mixed-methods approaches by which a qualitative-quantitative combination would be required. Further exploration of potential source markets other than Malaysia such as Indonesia and the Middle East might very well complement a better picture of the world's Muslim Friendly Tourism (MFT) market. Longitudinal studies on political and social change affecting travel patterns of Muslim tourists could also sufficiently deepen the discourse into the resilience of tourism in shifting sands. Finally, further study into how digital innovations is folded into the enhancement of the Muslim travel experience will provide valuable insights into how technology is shaping the future of tourism.

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6

ANALYSIS OF MARKET POWER IN THE SUPPLY CHAIN OF CUCUMBER IN GREENHOUSE CULTIVATION / ÖRTÜALTI YETİŞTİRİCİLİĞİNDE HIYAR'IN TEDARİK ZİNCİRİNDEKİ PAZAR GÜCÜ ANALİZİ¹

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Abstract

The aim of the study is to investigate the market power of cucumber product for the production area market and consumption area market, and consumption area market and consumption area retail supply chains. The scope of the study is the greenhouse production period. For this reason, Antalya province, where the highest cucumber production is realized during the greenhouse production period, is preferred as the production region, and Ankara and İstanbul provinces, which have a significant proportion of Türkiye's population and where the highest consumption of the product is realized, are preferred as the consumption region. The study was conducted for the 2014-2022 period by using monthly data sets from October to June, which is the greenhouse production period. While analyzing the market power of each supply chain of the product, the stationarity levels of the variables included in the model are taken into account. The Vector Error Correction Model (VECM) was used to analyze the market power of the İstanbul wholesale market - İstanbul retail supply chain for cucumber product, while the Lag Distributed Autoregressive Model (ARDL) was used to analyze the market power of other supply chains. As a result of the analysis, the validity and adequacy assumptions that the market operates under perfect competition conditions are not met in all supply chains of cucumber products; therefore, imperfect competition exists in the supply chains of Antalya wholesale market - Ankara wholesale market, Ankara wholesale market - Ankara retail market, Antalya wholesale market - İstanbul wholesale market, İstanbul wholesale market - İstanbul retail market, and there is market power in the relevant supply chains. In this context, it is considered that the establishment of branches for a certain area/region width and taking measures to regulate the number of branches within a certain distance would limit price increases.

Key Words: Market Power, Greenhouse, Autoregressive Distributed Lag (ARDL), Vector Error Correction Model (VECM)

Jel Codes: D40, D82, Q11, C32

1. Giriş

Sebzeler genellikle heterojen bir yapıdadır ve tarımsal ürünlere kıyasla farklı özelliklere sahiptir. Bu nedenle fiyatlardaki dalgalanmalardan ve artışlardan daha fazla etkilenmektedir. Fiyat dalgalanmalarının temel nedenlerinden biri iklim koşulları ve mevsimsel faktörlerdir. Bu faktörler sezon içi ve dışı fiyatları arasındaki belirgin farklılığa sebep olmaktadır. Sebze fiyatlarındaki mevsimsel etkinin yanı sıra arz ve talep esnekliklerinin düşük olması, sebzelerin raf ömrünün kısa olması, sınırlı depolama imkanları, pazarlama sürecindeki zayıflar ve yüksek nakliye maliyetleri gibi unsurlar da fiyat dalgalanmalarına katkı sağlamaktadır (WB, 2011). Bu faktörlere ek olarak sebze fiyatlarındaki dalgalanmaya yol açan

bir başka önemli unsur da pazarlama tedarik zinciri aşamalarındaki rekabet düzeylerinin eşitsizliğidir.

Tarım ürünleri piyasasında tedarik zincirinin farklı aşamalarında genellikle az sayıda satıcı ve çok sayıda alıcı bulunmaktadır. Bu da fiyat dalgalanmalarına neden olmaktadır (Sheldon ve Sperling, 2003; Sexton ve Zhang, 2001). Ayrıca tarım ürünleri piyasasında sebze pazarlama kanalları özellikle Türkiye’de uzundur. Bundan kaynaklı olarak piyasada aracı sayısı fazladır, araçlar üreticilere kıyasla daha güçlü konumdadır, tüketicinin ödediği fiyat içinde üreticinin eline geçen pay daha düşüktür ve pazarlama marjlar daha yüksektir. Piyasa için bu bir sorundur ve sorun olmaya da devam etmektedir (Alpkent, 1995; Bayramoğlu vd., 2020). Bu sorunlar, pazarlama tedarik zincirinin yapısından doğrudan etkilenmektedir. Türkiye’de, sebze pazarlama zincirinde haller çok önemli rol oynamaktadır. Sebzelerin üreticiden nihai-tüketicieye ulaştırılmasında en yaygın pazarlama kanalı; üretici → üretim bölgesi yaş meyve-sebze (toptancı) halı → tüketim bölgesi yaş meyve-sebze (toptancı) halı → perakendeci → tüketici kanalıdır (Kadanalı ve Dağdemir, 2013: 77; Yurdakul, 2018: 132). Pazarlama zincirinin tüketiciden önceki son halkasını oluşturan perakende sektöründe geleneksel perakendeciliğe alternatif bir kanal olarak özellikle 2000’li yıllardan itibaren önemli bir büyüme gösteren indirim marketleri en önemli perakende kanalı haline gelmiştir (Retail Türkiye, 2021). Perakendeciliğin bu şekilde indirim marketlerinde yoğunlaşmaya başlamasıyla 2019 yılı itibariyle ilk 4 indirim marketinin hızlı tüketim malları (HTM) içindeki toplam payı (CR4) %50 seviyesine ulaşmıştır. Bu durum pazar gücü kaygılarına neden olmaktadır (Rekabet Kurumu, 2021: 19). Bu bağlamda HTM sektöründeki dikey bütünlük yapı ve pazar gücü gibi etkiler tüketicilerin daha yüksek veya düşük fiyatla karşılaşmalarına neden olabilmektedir (Rekabet Kurumu, 2021: 57, 62). Bu ise firmaların varsa pazar güçlerini kendi kârlarını artırmaya yönelik kullanmaları veya rekabet etmek için fiyatları düşürüp düşürmemesine bağlı olarak değişebilmektedir. Türkiye’de sebze arzında çok sayıda bağımsız üretici bulunmasına rağmen, pazarlama zincirinde daha az sayıda aracının bulunması ve üretici ile tüketici fiyatları arasındaki kayda değer farklar, gıda enflasyonunun artışını tetiklemekte ve pazarlama zincirinin her aşamasındaki fiyat aktarım mekanizmalarının sorgulanmasını gerekli kılmaktadır. Bu çalışmanın amacı, enflasyon sepetinde önemli bir ağırlığa sahip hıyar ürününün sezon dışı pazarlama tedarik zincirindeki piyasa yapısını analiz etmek ve bu bağlamda politika önerilerinde bulunmaktır.

2. Method

2.1. Veri Seti

Hıyar ürününün üretim bölgesi hal (Antalya hal) – tüketim bölgesi hal (Ankara ve İstanbul hal) ile tüketim bölgesi hal (Ankara ve İstanbul hal) – tüketim bölgesi perakende (Ankara ve İstanbul) tedarik aşamasının pazar gücü, 15 Ekim - 15 Haziran örtüaltı dönemine ait aylık veri setleri kullanılarak 2014-2022 dönemi için analiz edilmiştir. Model tahminlerinde kullanılan değişkenlere ilişkin tüm tanımlamalar Tablo 1'de sunulmuştur.

Tablo 1: Değişkenler ve Değişkenlere ait Açıklamalar

Tanım	Açıklama	Veri Kaynağı
ahhf	Antalya Hal Hıyar Fiyatı (kg/TL)	Antalya Büyükşehir
ahhm	Antalya Toplam Hıyar Miktarı (ton)	Belediyesi Hal
ihhf	İstanbul Hal Hıyar Fiyatı (kg/TL)	İstanbul Büyükşehir
ihhm	İstanbul Hal Hıyar Miktarı (ton)	Belediyesi Hal
anhhf	Ankara Hal Hıyar Fiyatı (kg/TL)	Ankara Büyükşehir
anhm	Ankara Hal Hıyar Miktarı (ton)	Belediyesi Hal
iphf	İstanbul Perakende Hıyar Fiyatı (kg/TL)	TÜİK
anphf	Ankara Perakende Hıyar Fiyatı (kg/TL)	
anphm	Ankara Perakende Hıyar Miktarı (ton)	
iphm	İstanbul Perakende Hıyar Miktarı (ton)	
aihm_h	Antalya Hal-İstanbul Hal Toplam	Araştırma ekibi tarafından hesaplanmıştır.
aahm_h	Antalya Hal-Ankara Hal Toplam	
ipm_h	İstanbul Hal-İstanbul Perakende Toplam	
apm_h	Ankara Hal-Ankara Perakende Toplam	
duaihm_h	Pandemi kukla değişkeni olup, 2019 Aralık ayı ve sonrası için "1" diğer aylar için "0" değerini	

Hıyar miktarları ve hal fiyatları, üretici bölge için Antalya, tüketici bölge için Ankara ve İstanbul Büyükşehir Belediyesi Toptancı Halı Müdürlüklerinden temin edilmiştir. Tüketim bölgelerine ait perakende hıyar fiyatları TÜİK'in resmi internet sayfasından derlenmiştir. Üretim bölgesine ait hıyar fiyatları hıyar ürününe ait Antalya ili üretici fiyat endeksiyle (ÜFE, 2003=100), tüketim bölgesi hal fiyatları ile perakende fiyatları ise taze meyve ve sebze için özel amaçlı tüketici fiyat endeksi (TÜFE, 2003=100) ile reelleştirilmiştir.

Perakende hıyar tüketim miktarı verilerine doğrudan erişilememektedir. Bu veri seti oluşturulurken perakendecilerin kullandıkları hal içi ve hal dışı ürün temin yöntemi dikkate alınmıştır. Hıyar perakende miktarında, ürünün hal içinden (yaklaşık %40) ve hal dışından (yaklaşık %60) temin edilme oranları kullanılmıştır. Hal içinden temin edilen tüketim miktarı, üretici bölgesi hallerinden tedarik edilen üretim miktarı; hal dışından temin edilen tüketim miktarı ise Türkiye örtüaltı üretimi içinde öneme sahip olan illerin (Türkiye örtüaltı hıyar üretiminin yaklaşık %67'sini oluşturan Antalya, Mersin ve İzmir) payları dikkate alınarak gerçekleştirilmiştir. Bu tüketim miktarları brüt olup, net perakende tedarik miktarı için Ankara Ticaret Odası (ATO, 2022) (%15) ve İstanbul Ticaret Odası'nın (İTO, 2022) (%12) yayınladığı ürüne ait fire oranlarından yararlanılmıştır.

Analizde yer alan maliyet değişkenleri kg başına düşen nakliye, ambalajlama ve işçilik değerleridir. Kg başına düşen maliyet hesaplanırken üretim bölgesi - tüketim bölgesi hal tedarik aşamasında tırın taşıma kapasitesi (26 ton) ile tüketim bölgesi hal - tüketim bölgesi perakende tedarik aşamasında kamyonetin (11 ton) taşıma kapasitesi baz alınmıştır. Nakliye maliyeti değişkeni oluşturulurken; akaryakıt ve amortisman gideri ile hal çıkış, köprü geçiş (sadece İstanbul tedarik zinciri için), hamaliye (sadece tüketim bölgesi hal ile tüketim bölgesi perakende tedarik aşamasında) ve şoför ücretleri kullanılmıştır. Akaryakıt maliyeti hesaplanırken Enerji Piyasası Üst Kurulu'ndan temin edilen ve TÜFE Enerji Maliyet Endeksi (2003=100) ile reelleştirilen Antalya (Kepez), Ankara (Yenimahalle) ve İstanbul (Bayrampaşa)'ya ait motorin fiyatları ile Ulaştırma ve Altyapı Bakanlığı'nın (Karayolları Genel Müdürlüğü) resmi internet sitesinde yayınlanan Antalya (Kepez)-İstanbul (Bayrampaşa), Antalya (Kepez)-Ankara (Yenimahalle) ilçeleri arası karayolu mesafesi ile İstanbul (Bayrampaşa) ve Ankara (Yenimahalle) ilçelerinin ortalama karayolu uzaklığı dikkate alınmıştır. Amortisman gideri hesaplanırken ürün taşımada kullanılan tırın ve kamyonetin ekonomik ömrü (10 yıl) kullanılmıştır. Nakliye maliyetinin bir başka kalemi olan hal çıkış maliyeti için Antalya hal -Ankara ve İstanbul hal tedarik aşamasında Antalya Hal Müdürlüğü'nün her yıl belirlediği tır çıkış ücreti kullanılırken tüketim bölgesi hal ile perakende tedarik aşaması için hal çıkış ücreti maliyete dahil edilememiştir. Bunda, Ankara Büyükşehir Belediyesi Hal Müdürlüğü'nün hal giriş veya çıkışlarında ücret talebinde bulunmaması ile İstanbul Büyükşehir Belediyesi Hal Müdürlüğü'ne ait hal giriş/çıkış ücretinin temin edilememe kısıt etkili olmuştur. Köprü geçiş ücretinin hesaplanırken Karayolları Genel

Müdürlüğü'nden temin edilen 15 Temmuz Şehitler/Fatih Sultan Mehmet (2016 Ağustos ayı ve öncesi) ile Yavuz Sultan Selim (2016 Eylül ayı ve sonrası) köprülerinin tır geçiş ücretleri kullanılmıştır. Nakliye maliyeti içinde yer alan şoför ücreti hesaplanırken Antalya Nakliyeciler Derneği ile yapılan görüşmelerden elde edilen 2022 yılı Temmuz ayı şoför ücreti baz alınmıştır. Bu ücret serisi, asgari ücret artış değerleri (Çalışma ve Sosyal Güvenlik Bakanlığı, 2022) dikkate alınarak geriye doğru yürütülmüştür. Nakliye maliyeti içinde bulunan hamaliye gideri hesaplanırken İstanbul ve Ankara hal müdürlüklerinin her yıl belirlediği hal içi/dışı hamaliye ücretinden yararlanılmıştır. Bir diğer maliyet değişkeni olan ambalajlama maliyeti sadece üretici bölgesi toptancı-tüketici bölgesi toptancı tedarik zincirinde modele dahil edilmiş olup, ambalajlama gideri olarak "Kâğıt ve Mukavadan Ürünler"e ait TÜFE (2003=100) indeksi kullanılmıştır. İşgücü maliyeti değişkeni olarak ise İTO tarafından yayımlanan ücretler geçinme endeksi (ÜGE, 2003=100) analize dahil edilmiştir. Maliyet değişkenleri TÜFE genel (2003=100) endeksi ile reelleştirildikten sonra kg başına düşen maliyete dönüştürülmüştür.

2.2. Yöntem

Araştırma kapsamında, incelenen hıyar ürününün tedarik zincirinin pazar gücü yapısı ARDL sınır testi ve VECM yöntemleri ile incelenmiştir. Pazar gücü, bir firmanın ürün fiyatını marjinal maliyetin üzerinde belirleme yeteneği olup, literatürde; endüstriyel vaka çalışmaları, gösterge fiyat hareketleri modeli, Yapı-Davranış-Performans Paradigması (SCP) ve Yeni Ampirik Endüstriyel Organizasyon (NEIO) modelleri olmak üzere dört ana yaklaşım ile incelenmektedir (Digal ve Ahmadi-Esfahani, 2002: 564). Bu yaklaşımlardan, endüstriyel vaka çalışmaları, çalışmanın maliyetli olması, elde edilen bulguların çalışma yapılan sektöre özel bilgiler sunması gibi dezavantajlara sahipken (Scherer ve Ross, 1990) gösterge fiyat hareketleri modeli uygulamanın tamamen teoriye dayandırılmaması ve örtük anlaşma nedeniyle piyasanın tam olarak ayrıştırılamaması dezavantajına sahiptir. Pazar yapısı, davranışı ve performansı arasındaki ilişkiyi ele almasına rağmen SCP yaklaşımı ise mikro ekonomik temele dayanmaması (Hallam ve Rapsomanikis, 2007: 110), yoğunlaşma indekslerinin modelde içsel olarak belirlenmemesi (Clarke ve Davies, 1982) ve statik analizlerin kullanımına dayanması gibi bazı dezavantajları içermektedir (Hatırlı vd., 2010). Nitekim SCP'nin bu sınırlılıkları 1980'lerde geliştirilen NEIO yaklaşımı ile birlikte ortadan kaldırılmıştır. Bu yaklaşım ile tedarik zincirinin farklı

aşamalarındaki pazar gücü incelenebilmektedir (Sheldon ve Sperling 2003). Ayrıca yaklaşım; iktisat teorisine dayanma, marjinal maliyet ve pazar gücünü doğrudan yapısal modeller yardımı ile tahmin etme gibi avantajlara da sahiptir (Perloff, 1991: 7). Avantajlarından dolayı, bu yöntem literatürde benimsenmiş ve tedarik zincirinin rekabet düzeyi ile pazar gücünü analiz etmek için farklı metodolojiler geliştirilmiştir (Digal ve Ahmadi-Esfahani, 2002). Geliştirilen NEIO modelleri; veri kısıtı, bulguların doğruluğu, analizin tek sektöre yönelik yapıyor olması gibi hususlarda eleştirilmesine rağmen yaklaşım pazar gücünün analiz edilmesinde Analitik Pazar Teorisi (APT) çalışmalarına kıyasla üstündür (Hallam ve Rapsomanikis, 2007: 105-106). Üstünlüklerine rağmen gerek APT gerekse NEIO model grupları aynı hedefi paylaşmakta ve bu iki model grubu benzer bir amaca hizmet etmektedir. APT modellerinin analiz sonuçları genellikle kesinlikten yoksun olmakla birlikte, pazar gücünü farklı veri düzeylerinde inceleyerek çeşitli sonuçlara ulaşmaktadır. NEIO ve APT'den hangisi kullanılırsa kullanılsın pazar gücünün, rekabet politikalarının amacına göre etkin bir şekilde belirlenmesi gerekmektedir. Pazar gücünün analizine ilişkin literatürdeki çalışmalar, genellikle ya tedarik zincirinin tamamına ya da zincirin belirli aşamalarına odaklanmaktadır. Bu alandaki önemli çalışmalara Holloway (1991), McCorrison vd. (1998), Lloyd vd. (2006 ve 2009) ve Cavicchioli (2018) örnek verilebilir. Literatürdeki son gelişmeler, tedarik zincirinin her aşamasındaki pazar gücünün varlığının, APT ve NEIO modellerini birleştiren yeni bir yaklaşım ile daha kapsamlı bir şekilde analiz edilebileceğini göstermektedir. Nitekim Lloyd vd. (2006 ve 2009) McCorrison vd.'nin (1998) modelinden esinlenerek McCorrison-Lloyd yaklaşımını geliştirmiştir. Yaklaşım, APT ile NEIO teorilerinin bir sentezidir ve pazarlama marjı ile aksak rekabet varsayımlarına dayanmaktadır. Yaklaşım aynı zamanda zaman serisi verilerinin kullanımı ve veri kısıtı durumunda türev değişkenin kullanımına izin verme gibi önemli üstünlüklere sahiptir (Cavicchioli, 2018: 5). McCorrison-Lloyd yaklaşımında, gıda zinciri boyunca aksak rekabetin varlığını test etmek amacıyla indirgenmiş form denklemleri oluşturulmakta ve pazarlama marjını etkileyen değişkenler, davranışsal parametrelerin değerlerine bağlı olarak farklılık göstermektedir. Bu modelde, bir ürünün pazarlama tedarik zinciri, üretim bölgesi toptancı, tüketim bölgesi toptancı ve perakendeci aşamalarını içerecek şekilde yapılandırılmaktadır. Bu yapıya dayanarak, tüketim bölgesi toptancı ile perakendeci arasındaki pazar gücünü açıklamak amacıyla Lloyd vd. (2006) ve Cavicchioli (2018) tarafından geliştirilen teorik çerçeve kullanılmaktadır. Söz konusu modelde, ilk olarak n sayıda üreticinin ürettiği homojen ürünün üretim bölgesindeki toptancılar

aracılığıyla tüketim bölgesindeki toptancılara buradan da perakendecilere ulaştırıldığı varsayılmakta olup perakende aşamasındaki talep denklemi ($Q = h - bRP + cX$) ile tüketim bölgesi toptancısına ait arz denklemi ($WP = k + gA + hN$)'dir. Denklemden yer alan Q ilgili malın talep miktarını, RP perakende düzeydeki fiyatı, X talebi etkileyen dışsal (talep kaydırıcıları) değişkenleri, WP tüketim bölgesindeki toptancı fiyatını, A toptancı seviyedeki arz miktarını ve N ise arzı etkileyen dışsal değişkenleri temsil etmektedir. İlgili denklemlerden hareketle girdi-çıkıtı katsayısının 1'e eşit ve firmanın sabit oranlı teknolojiye sahip olduğu varsayımı altında perakendeci i 'nci firmanın kâr fonksiyonu (π_i) aşağıdaki gibidir:

$$\pi_i = RP(Q)Q_i - WP(A)A_i - C_i(Q_i) \quad (1)$$

Eşitliklerdeki, A_i i 'nci firmanın sattığı ürün miktarını C_i ise satın alınan ürünün fiyatı dışında ortaya çıkan maliyetleri ifade etmektedir. Ülkenin toplam arzı S ile temsil edilmesi durumunda, ürüne ait toplam arz fonksiyonu $S = Q + W$ olarak da ifade edilebilir. Denklemden bulunan W , ihracat miktarını temsil eden dışsal değişkendir. Toplam arz denklemi ile perakende talep ve tüketim bölgesi toptancısı arz denklemleri kar fonksiyonunda (Eşitlik 1) yerine yazıldığında, tedarik zincirindeki oligopolistik ve oligopsonistik gücü içeren eşitliğe ulaşılır (Lloyd vd., 2006: 126):

$$RP - \frac{\theta}{b}Q = M + WP + \mu gQ \quad (2)$$

İlgili eşitlikte yer alan θ , oligopolistik; μ , oligopsonistik davranış parametrelerini ve M ise toplam maliyet fonksiyonunda yer alan pazarlama maliyetlerini temsil etmekte olup, $M = y + zE$ olarak ifade edilmektedir. M 'nin, tedarik zinciri aşamasındaki tüketim bölgesi toptancılarının ve perakende düzeydeki firmaların tüm sabit (y) ve değişken (E) pazarlama maliyetlerinin toplamından oluştuğu varsayılmaktadır. Yukarıda yer alan perakendeci talep fonksiyonu ($Q = h - bRP + cX$), tüketim bölgesi toptancılarının ters arz fonksiyonu ($WP = k + gA + hN$), Eşitlik 2 ve pazarlama maliyetleri ($M = y + zE$) eşitlikleri birlikte çözüldüğünde aşağıdaki eşitliklere ulaşılır:

$$Q = \frac{h+cX-bzE-bgN}{(1+Q)+bg(1+\mu)} \quad (3)$$

$$RP = \frac{h+[(1+\theta)+bg(1+\mu)][(1-b)(gN)+(1-bz)E+cX]}{(1+\theta)+bg(1+\mu)} \quad (4)$$

$$WP = \frac{g[h+cX-bzE]-g[b-((1+\theta)+bg(1+\mu))(N)]}{(1+\theta)+bg(1+\mu)} \quad (5)$$

Eşitlik (4)'ten Eşitlik (5)'in çıkartılması sonucunda, ilgili pazarlama tedarik zincirindeki piyasa yapısının belirlenmesini mümkün kılan nihai eşitliğe ulaşılır:

$$RP - WP = \frac{h\left(\frac{\theta}{b}+g\mu\right)+(1+bg)(y+zE)+\left(\frac{\theta}{b}+g\mu\right)cX-(\theta+bg\mu)(h+gN)}{(1+\theta)+bg(1+\mu)} \quad (6)$$

Pazarlama marjının ($RP - WP$) bağımlı değişken olduğu Eşitlik 6'da piyasa yapısını açıklayan θ ve μ katsayılarına ulaşılmaktadır. θ ve μ katsayıları sırasıyla tedarik zincirinde oligopolistik ve oligopsonistik bir yapının varlığına işaret etmektedir. θ (μ) katsayısının sıfıra eşit olması tedarik zincirinin tam rekabet piyasası koşulları altında 1'e eşit olması monopol (monopson) piyasası koşulları altında işlediğini göstermektedir. 0 ile 1 arasındaki bir katsayı değerine sahip olmaları ise tedarik zincirinin oligopolistik (oligopsonistik) bir yapıda ($P > MC$) olduğunu ifade etmektedir. Bu iki katsayının (θ ve μ) sıfıra eşit olması durumunda, piyasada oligopolistik ve oligopsonistik bir yapı söz konusu değildir ($RP - WP = y + zE = M$). Burada, iki önemli bulguya ulaşılmakta olup, ilki tam rekabet varsayımı altında, pazar marjı sadece sabit ve değişken pazarlama maliyetlerinin toplamına (M) eşittir. İkincisi ise, pazar marjının ürünün talep (N) ile arz (W) fonksiyonundaki kaymalardan etkilenmemesidir. Öte yandan θ ve μ 'nün sıfırdan farklı olması durumunda hem pazar gücü ortaya çıkmakta hem de talep ve arz kaydırıcılarındaki değişim pazar marjını etkilemektedir. Böylesi bir durumda, talep (N) ile arz (W) kaydırıcıları eşitliğe dahil edilmelidir. Böylece Eşitlik 7'de sunulan sınırlandırılmış model yardımıyla tam rekabetin varlığına ilişkin hipotezin test edilmesi mümkündür.

$$RP = \beta_0 + \beta_1 WP + \beta_2 M + \beta_3 N + \beta_4 W \quad (7)$$

Tam rekabet koşulları altında, dışsal değişkenlerin hiçbiri marjı etkileyememektedir ve marjla ilişkili parametreler (β_1, β_2) sıfırdır. İktisat teorisine paralel olarak ek bir koşul daha bulunmaktadır. Bu hipotezin test edilebilmesi için; uzun dönem toptan fiyatı (β_1) ile pazarlama maliyeti (β_2) arasında pozitif ve istatistiksel olarak anlamlı bir ilişki bulunmalıdır. Bu ilişkinin

varlığı ön koşul olup, bu koşul altında; tam rekabet $H_0: \beta_1 > 0; \beta_2 > 0; \beta_3 = \beta_4 = 0$ hipotezi ile test edilir. Sıfır hipotezi kabul edilmesi durumunda tedarik zincirinin tam rekabet piyasa yapısına sahip olduğu; reddedilmesi durumunda ise piyasada pazar gücünün varlığı kabul edilmektedir. Pazar gücünün varlığının kabulü için ayrıca (i) β_3 ve β_4 katsayıları, sıfırdan farklı olmalı ($\beta_3 \neq 0; \beta_4 \neq 0$), (ii) N dışsal değişkeninin katsayısı pozitif olmalı ($\beta_3 > 0$) ve (iii) W dışsal değişkeninin katsayısı negatif olmalıdır ($\beta_4 < 0$). Test sonucunda; sıfır hipotezi reddedilmezse tedarik zinciri boyunca tam rekabetin varlığı reddedilirse pazar gücünün varlığı kabul edilmektedir.

Hiyar ürününe ait pazar gücünün analiz edildiği bu çalışmada kullanılan zaman serilerinin farklı düzeylerde durağan olması durumunda modellerin tahmininde ARDL yaklaşımı (Eşitlik 8) aynı düzeyde durağan olmaları durumunda ise VECM yaklaşımı (Eşitlik 9) kullanılmıştır.

$$\begin{aligned} \Delta RP_t = & \lambda_0 + \sum_{i=1}^p \lambda_1 \Delta RP_{t-1} + \sum_{i=0}^n \lambda_2 \Delta WP_{t-1} + \sum_{i=0}^y \lambda_3 \Delta M_{t-1} + \\ & \sum_{i=0}^z \lambda_4 \Delta N_{t-1} + \sum_{i=0}^q \lambda_5 \Delta W_{t-1} + \delta_1 RP_{t-1} + \delta_2 WP_{t-1} + \delta_3 M_{t-1} + \\ & \delta_4 N_{t-1} + \delta_5 W_{t-1} + u_t \end{aligned} \quad (8)$$

$$\begin{aligned} \Delta RP_t = & \alpha_0 + \sum_{i=1}^p \alpha_1 \Delta RP_{t-1} + \sum_{i=0}^n \alpha_2 \Delta WP_{t-1} + \sum_{i=0}^y \alpha_3 \Delta M_{t-1} + \\ & \sum_{i=0}^z \alpha_4 \Delta N_{t-1} + \sum_{i=0}^q \alpha_5 \Delta W_{t-1} + \mu ECT_{t-1} + v_t \end{aligned} \quad (9)$$

Eşitliklerde yer alan RP, WP, M, N ve W sırasıyla perakende fiyatı, toptan fiyatı, toplam maliyeti, talep edilen ürün miktarını ve arz edilen ürün miktarını, Δ , fark operatörünü ve u ile v ise beyaz gürültü hata terimlerini ifade etmektedir.

3. Analiz Bulguları

Hiyar ürününün üretim bölgesi hal (Antalya)-tüketim bölgesi hal (Ankara ve İstanbul) ile tüketim bölgesi hal-tüketim bölgesi perakende tedarik zincirlerinin pazar gücü 2014-2022 yıllarına ait örtüaltı dönemi verileri kullanılarak analiz edilmiştir. Analize geçmeden önce tüm analizlerde yer alan (yapay değişkenler hariç) değişkenler mevsimsellik sınavına tabi tutulmuştur. Ardından analizde sahte regresyon problemi ile karşılaşmamak adına analizde kullanılan serilerin durağan olup olmadığı ADF ve PP birim kök testleri kullanılarak incelenmiş ve birim kök testleri sonuçları Ek-1'de sunulmuştur. Değişkenlere ait ADF ve PP

birim kök testi sonuçları incelendiğinde; değişkenlerin farklı düzeyde (İstanbul hal-İstanbul perakende tedarik zinciri hariç) ve farklı modellerde durağan olduğu tespit edilmiştir. Bu nedenle, değişkenler arasındaki eşbütünlük ilişkisi ARDL sınır testi ve VECM yaklaşımları ile analiz edilmiştir. Elde edilen analiz bulguları her tedarik zinciri için ayrı ayrı sunulmuştur.

3.1. Antalya Hal - Ankara Hal Tedarik Zincirine ait Pazar Gücü Analizi

Antalya hal - Ankara hal tedarik zincirine ait pazar gücü analizinde; Antalya hal hıyar fiyatı (*ahhf*), Ankara hal hıyar fiyatı (*anhhf*), Antalya hal hıyar miktarı (*ahhm*), Ankara hal hıyar miktarı (*anhhm*) ile Antalya hal-Ankara hal tedarik zinciri boyunca katlanılan maliyet (*aahm_h*) değişkenleri kullanılmıştır. Modelin tahmininde tüm matematiksel fonksiyon kalıpları denenmiş ve logaritmik doğrusal fonksiyon kalıbı gerek değişkenlerin beklenen işaretleri gerek de anlamlılıkları bakımından daha üstün sonuçlar verdiği için tercih edilmiştir. ARDL sınır testi analizinden önce tahmini gerçekleştirilecek olan VAR modeli için uygulanacak analizlerin güvenilirliği açısından optimal gecikme uzunluğu belirlenmiştir. Gecikme uzunluğu LR, FPE, AIC, SC ve HQ bilgi kriterleri ile araştırılmış olup, optimal gecikme uzunluğu 9 olarak belirlenmiştir. Optimal gecikme uzunluğu belirlendikten sonra model tahmininin güvenilir sonuçlar vermesi adına tanısıl testler uygulanmış ve model artıklarında değişen varyans (Breusch Pagan Godfrey=0,8884) ve otokorelasyon (Breusch-Godfrey LM=0,8886) probleminin olmadığı, hataların normal dağılım gösterdiği (Jarque-Bera=0,31) ve modelde spesifikasyon hatasının olmadığı (Ramsey Reset testi=0,8829) belirlenmiştir. Ayrıca Cusum ve Cusum kare testleri (Ek-2) ile modelde yapısal bir kırılmanın da bulunmadığı tespit edilmiştir. Tanısıl istatistikleri takiben sınır testi yaklaşımıyla değişkenler arasında eşbütünlük ilişkisi araştırılmıştır (Tablo 2).

Tablo 2: ARDL Sınır Testi

k	F istatistiği	Kritik Değerler	I(0)-Alt sınır	I(1)-Üst sınır
4	11,1093	%10	2,68	3,53
		%5	3,05	3,97
		%2,5	3,4	4,36
		%1	3,81	4,92

Not: k modeldeki açıklayıcı değişken sayısıdır. Kritik değerler Pesaran vd. (2001:301)'deki Tablo

ANALYSIS OF MARKET POWER IN THE SUPPLY CHAIN OF CUCUMBER
IN GREENHOUSE CULTIVATION / ÖRTÜALTI YETİŞTİRİCİLİĞİNDE HIYAR'IN
TEDARİK ZİNCİRİNDEKİ PAZAR GÜCÜ ANALİZİ
Kübra Önder, Meryem Aytekin, Büşra Akın, Selim Adem Hatırlı, Selim Çağatay & Onur Demirel

Tablo 3: ARDL (4, 8, 8, 8, 8) modeli tahmin sonuçları

ARDL (9; lanhhf, ahhf, aahm h, anhhm, ahhm, sabit, trend)				
Bağımlı Değişken: lanhhf	Kısa Dönem Sonuçları			
	Katsayı	Standart Hata	t İstatistiği	Olasılık
Bağımsız Değişkenler				
ECT*	-3,5726	0,3676	-9,7174	0,0000*
sabit	-6,4798	0,6596	-9,8235	0,0000*
Δ lanhhf _{t-1}	1,8310 (1,0018)	0,2648	6,9147	0,0000*
Δ lanhhf _{t-2}	0,9068 (0,4893)	0,1757	5,1592	0,0002*
Δ lanhhf _{t-3}	0,5182 (0,2753)	0,1092	4,7441	0,0005*
Δ ahhf	0,8745 (0,5056)	0,0878	9,9577	0,0000*
Δ ahhf _{t-1}	-2,9449 (-1,7045)	0,3396	-8,6712	0,0000*
Δ ahhf _{t-2}	-2,2124 (-1,2800)	0,3279	-6,7474	0,0000*
Δ ahhf _{t-3}	-1,3009 (-0,7507)	0,1998	-6,5101	0,0000*
Δ ahhf _{t-4}	-0,4810 (-0,2767)	0,1000	-4,8098	0,0004*
Δ ahhf _{t-5}	-0,7324 (-0,4213)	0,1418	-5,1632	0,0002*
Δ ahhf _{t-6}	-0,3939 (-0,2271)	0,1007	-3,9136	0,0021*
Δ ahhf _{t-7}	-0,4231 (-0,2459)	0,1088	-3,8892	0,0022*
Δ aahm _t	-0,8616 (-1,0763)	0,1774	-4,8578	0,0004*
Δ aahm _{t-1}	-3,9430 (-4,9496)	0,4213	-9,3586	0,0000*
Δ aahm _{t-2}	-4,1463 (-5,2313)	0,6015	-6,8936	0,0000*
Δ aahm _{t-3}	-2,4599 (-3,1202)	0,3641	-6,7570	0,0000*
Δ aahm _{t-4}	-2,9305 (-3,737)	0,3897	-7,5205	0,0000*
Δ aahm _{t-5}	-3,2389 (-4,1535)	0,5891	-5,4970	0,0001*
Δ aahm _{t-6}	-2,1597 (-2,7848)	0,4674	-4,6210	0,0006*
Δ aahm _{t-7}	-2,2668 (-2,9388)	0,5248	-4,3197	0,0010*
Δ anhhm	-2,80E-08 (-0,0817)	1,13E-08	-2,4767	0,0291*
Δ anhhm _{t-1}	-1,25E-07 (-0,3650)	1,54E-08	-8,0943	0,0000*
Δ anhhm _{t-2}	-1,17E-07 (-0,3410)	1,87E-08	-6,2500	0,0000*
Δ anhhm _{t-3}	-8,65E-08 (-2,2540)	1,71E-08	-5,0614	0,0003*
Δ anhhm _{t-4}	-5,49E-08 (-0,1630)	1,36E-08	-4,0344	0,0017*
Δ anhhm _{t-5}	-5,38E-08 (-0,1600)	1,65E-08	-3,2660	0,0068*
Δ anhhm _{t-6}	-8,03E-09	1,37E-08	-0,5871	0,5681
Δ anhhm _{t-7}	2,58E-08 (0,0732)	1,25E-08	2,0696	0,0607*
Δ ahhm	2,19E-06	4,76E-06	0,4600	0,6537*
Δ ahhm _{t-1}	-5,00E-05 (-0,8010)	8,14E-06	-6,1469	0,0000*
Δ ahhm _{t-2}	-3,77E-05 (-0,6060)	6,28E-06	-6,0014	0,0001*
Δ ahhm _{t-3}	-2,94E-05 (-0,4760)	4,85E-06	-6,0742	0,0001*
Δ ahhm _{t-4}	-1,98E-05 (-0,3240)	4,39E-06	-4,5113	0,0007*
Δ ahhm _{t-5}	-2,34E-05 (0,386)	4,38E-06	-5,3386	0,0002*
Δ ahhm _{t-6}	-2,30E-05 (-0,3810)	5,31E-06	-4,3425	0,0010*
Δ ahhm _{t-7}	-7,40E-06 (-0,1210)	3,41E-06	-2,1712	0,0507*
EC = lanhhf- (1,2675*ahhf+0,9387*aahm h +0,0000*anhhm+0,0000*ahhm-0,0231*@trend)				
Uzun Dönem Sonuçları				
ahhf	1,2675 (0,7328)	0,1266	10,0118	0,0000*
aahm h	0,9387 (1,1726)	0,0959	9,7868	0,0000*
anhhm	2,22E-08 (0,0648)	9,87E-09	2,2469	0,0442*
ahhm	2,45E-05 (0,3906)	3,86E-06	6,3361	0,0000*
trend	-0,0231	0,0014	-16,0365	0,0000*
Not: 1. * Katsayıların %10 önem düzeyinde anlamlı olduğunu belirtmektedir. 2. Değişken tanımlarının başında yer alan "l" harfi değişkenin doğal logaritmasını alındığını ifade etmektedir. 3. ARDL modeli kısıtsız sabit ve kısıtlı trend seçim ile tahmin edilmiştir. 4. Parantez "(" içerisindeki rakamlar değişkenin esneklik sayısını ifade etmektedir. 5. EC "Hata Düzeltme" anlamına gelmektedir.				

ARDL sınır testi sonuçlarına göre hesaplanan F-istatistik değeri (11,1093) tüm anlamlılık düzeylerinde asimptotik kritik değerleri aşmakta olup bu durum değişkenlerin eşbütünleşik olduğunu göstermektedir. Eşbütünleşme ilişkisi modelde yer alan değişkenlere ait uygun gecikme uzunlukları dikkate alınarak ARDL (4, 8, 8, 8, 8) modeli ile analiz edilmiştir. Değişkenler arasındaki kısa ve uzun dönem ilişki Tablo 3'te sunulmuştur.

Tablo 3'teki ARDL kısa dönem tahmin sonuçlarına göre hata düzeltme katsayısı (-3,5726) istatistiksel olarak anlamlı ve negatif işaretlidir. Bu durum, kısa dönemde ortaya çıkan bir şokun uzun dönemde (yaklaşık 9 günde) dengeye geldiğini göstermektedir. Modelin kısa dönem sonuçlarına göre Ankara hal hıyar ürününün bir ($lanhhf_{t-1}$), iki ($lanhhf_{t-2}$), üç ($lanhhf_{t-3}$) dönem önceki fiyatlarında yaşanacak %1'lik bir artış, Ankara hal hıyar fiyatını ($lanhhf$) sırasıyla %1, %0,48 ve %0,27 oranında artırmaktadır. Ankara hal hıyar fiyatı ($lanhhf$) ile Antalya hal hıyar fiyatı ($ahhf$) arasında ise istatistiki olarak anlamlı pozitif yönlü ilişki mevcuttur. Antalya hal hıyar fiyatında ($ahhf$) gerçekleşen %1 artış, Ankara hal hıyar fiyatını ($lanhhf$) %0,50 oranında artırmaktadır. Diğer yandan, Antalya hal hıyar ürününün bir ($ahhf_{t-1}$), iki ($ahhf_{t-2}$), üç ($ahhf_{t-3}$), dört ($ahhf_{t-4}$), beş ($ahhf_{t-5}$), altı ($ahhf_{t-6}$) ve yedi ($ahhf_{t-7}$) dönem önceki fiyatları ise Ankara hal hıyar fiyatını ($lanhhf$) negatif yönde etkilemektedir. Antalya hal-Ankara hal toplam hıyar maliyeti ($aahm_h$) ve Ankara hal hıyar fiyatı arasındaki ilişki negatif yönlüdür ve Antalya hal-Ankara hal toplam hıyar maliyetindeki %1 artış, Ankara hal hıyar fiyatını %1,07 oranında azaltmaktadır. Ayrıca Antalya hal-Ankara hal toplam hıyar maliyetinin tüm gecikmelerindeki %1'lik artış, Ankara hal hıyar fiyatında da azalışa neden olmaktadır. Buna göre, maliyetlerde ortaya çıkan artışın Ankara hal hıyar fiyatına doğrudan ve gecikmeli olarak yansdığı anlaşılmaktadır.

Kısa dönem tahmin sonuçlarına göre Ankara hal hıyar miktarı ($anhhm$), Ankara hal hıyar fiyatını negatif yönde etkilemektedir. Buna göre Ankara hal hıyar miktarında gerçekleşen %1'lik artış, kısa dönemde Ankara hal hıyar fiyatında %0,08 oranında azalışa neden olmaktadır. Öte yandan, Ankara hal hıyar miktarının bir ($anhhm_{t-1}$), iki ($anhhm_{t-2}$), üç ($anhhm_{t-3}$), dört ($anhhm_{t-4}$) ve beş ($anhhm_{t-5}$) dönem öncesinde gerçekleşen %1'lik artış, Ankara hal hıyar fiyatlarını sırasıyla %0,36, %0,34, %0,25, %0,16 ve %0,16 oranında azaltmaktadır. Ankara hal hıyar miktarındaki altı dönem önceki değişimin ($anhhm_{t-6}$), negatif yönlü etkisi ise istatistiki olarak anlamlı değildir.

Fakat Ankara hal hıyar miktarında yedi dönem önceki ($anhhm_{t-7}$) %1'lik artış, kısa dönemde Ankara hal hıyar fiyatını %0,07 oranında artırmaktadır. Antalya toplam hıyar miktarı ($ahhm$) ile Ankara hal hıyar fiyatı arasındaki pozitif yönlü ilişki ise istatistiksel olarak anlamlı değildir. Antalya toplam hıyar miktarındaki bir ($ahhm_{t-1}$), iki ($ahhm_{t-2}$), üç ($ahhm_{t-3}$), dört ($ahhm_{t-4}$), beş ($ahhm_{t-5}$), altı ($ahhm_{t-6}$) ve yedi ($ahhm_{t-7}$) dönem önceki değişimin Ankara hal hıyar fiyatına etkisi negatif yönlüdür. Söz konusu dönemlerde Antalya hal hıyar fiyatında ortaya çıkan %1'lik artış, Ankara hal hıyar fiyatını sırasıyla %0,80, %0,60, %0,47, %0,32, %0,38, 0,38 ve %0,12 oranlarında düşürmektedir. Uzun dönemde, tüm değişkenlerin Ankara hal hıyar fiyatı ($lanhhf$) üzerindeki etkisi, %5 önem düzeyinde istatistiksel olarak anlamlıdır. Antalya hal hıyar fiyatı ($ahhf$) ile Ankara hal hıyar fiyatı ($anhhf$) arasında pozitif yönlü ilişki mevcut olup, Antalya hal hıyar fiyatındaki %1'lik artış, Ankara hal hıyar fiyatını %0,73 oranında yükseltmektedir. Antalya hal-Ankara hal toplam hıyar maliyetinde ($aahm_h$) gerçekleşen %1'lik artış ise uzun dönemde Ankara hal hıyar fiyatını %1,17 oranında artırmaktadır. Benzer şekilde, Ankara hal hıyar fiyatını pozitif yönlü olarak etkileyen bir başka değişken, Ankara hal hıyar miktarıdır ($anhhm$). Nitekim bulgulara göre, Ankara hal hıyar miktarındaki %1'lik artış, Ankara hal hıyar fiyatında ($anhhf$) %0,06 oranında artışa neden olmaktadır. Antalya toplam hıyar miktarı ($ahhm$) ile Ankara hal hıyar fiyatı arasındaki ilişki de pozitif yönlü tespit edilmiştir. Bulgulara göre %0,39 olarak tahmin edilen etkinin büyüklüğü, Antalya toplam hıyar miktarındaki %1'lik artışın, Ankara hal hıyar fiyatında %0,39 oranında artışına neden olduğunu ortaya koymuştur. Son olarak, modelde yer alan *trend* değişkeni (arz edilen ürünü pozitif yönde etkileyen teknolojik gelişmeler ve hava koşulları gibi faktörler) Ankara hal hıyar fiyatını negatif yönlü etkilemektedir. Trend değişkeninin Ankara hal hıyar fiyatı üzerindeki negatif etkisinin büyüklüğü yaklaşık %0,02'dir.

Özetle, ilgili tedarik zincirinin tam rekabet piyasası varsayımları altında gerçekleştiğine yönelik geliştirilen geçerlilik koşulu ($H_0 = ahhf > 0$ ve $aahm_h > 0$) sağlanırken, tam rekabet piyasasından söz edebilmek için gerekli olan yeterlilik koşulu ($H_0 = anhhm > 0$ ve $anhhm \neq 0$ ve $H_0 = ahhm < 0$ ve $ahhm \neq 0$; "tam rekabet koşulları geçerli") ise sağlanamamıştır. Dolayısıyla, Antalya hal-Ankara hal hıyar tedarik zincirinin tam rekabet piyasası koşulları altında faaliyet göstermediği ve aksak rekabet piyasası gibi hareket ettiği için tedarik zincirinde pazar gücünün var olduğu sonucuna ulaşılmıştır.

3.2. Ankara Hal - Ankara Perakende Tedarik Zincirine ait Pazar Gücü Analizi

Hıyar ürünü için tüketim bölgesi hal (Ankara) – tüketim bölgesi perakende (Ankara) tedarik zincirine ait pazar gücü analiz edilmiştir. Analizde; Ankara perakende hıyar fiyatı (*anphf*), Ankara hal hıyar fiyatı (*anhhf*), hıyar ürünü için Ankara hal-Ankara perakende tedarik zinciri boyunca katlanılan toplam maliyet (*apm_h*), Ankara perakende hıyar miktarı (*anphm*) ve Ankara hal hıyar miktarı (*anhhm*) değişkenlerinden faydalanılmıştır. Analizde yer alan değişkenler ADF ve PP birim kök testi sonuçlarına göre (Ek-1) farklı düzeyde durağandır. Bu nedenle, değişkenler arasındaki eşbütünlüşme ilişkisi ARDL sınır testi ile analiz edilmiştir. Burada, model tahmini için tüm fonksiyonel kalıplar denenmiş ve diğerlerine kıyasla daha iyi sonuç veren lineer matematiksel fonksiyon tercih edilmiştir. ARDL sınır testi öncesinde, LR, FPE ve AIC bilgi kriterleri ile optimal gecikme uzunluğu 6 olarak belirlenmiştir. Optimal gecikme uzunluğu belirlendikten sonra VAR(6) modelinin temel istatistikleri sağlayıp sağlamadığı kontrol edilmiş ve Breusch-Godfrey LM Testi olasılık değerine (0,8431) göre modelde otekorelasyon sorununun bulunmadığı, Breusch-Pagan-Godfrey testine ait F istatistik olasılık (0,6789) değerine göre değişen varyans sorununun olmadığı, Jarque Bera test istatistik olasılık değerine (0,4266) göre de hata terimlerinin normal dağılım gösterdiği belirlenmiştir. Modelde spesifikasyon hatasının varlığı Ramsey Reset testi (0,1480) ile modelin istikrar koşulu ise Cusum ve Cusum kare (Ek-2) testleri ile incelenmiştir. Test sonuçlarına göre modelde spesifikasyon hatasının bulunmadığı ve modelde yapısal bir kırılmanın var olmadığı sonucuna ulaşılmıştır. Model analizi için gerçekleştirilen temel testleri takiben değişkenler arasında eşbütünlüşme ilişkisinin varlığı ARDL Sınır testi yaklaşımıyla araştırılmıştır.

Tablo 4: ARDL Sınır Testi

k	F istatistiği	Kritik Değerler	I(0)-Alt sınır	I(1)-Üst sınır
4	13,4672	%10	2,2	3,09
		%5	2,56	3,49
		%2,5	2,88	3,87
		%1	3,29	4,37
Not: k modeldeki açıklayıcı değişken sayısıdır. Kritik değerler Pesaran vd. (2001:300)'deki Tablo CI(II)'den alınmıştır.				

Sınır testine ait F-istatistik değeri (13,46) Pesaran vd.'nin (2001) belirlemiş olduğu %5 ve %10 anlamlılık düzeylerinde asimptotik kritik değerlerin üstündedir. Sınır testi sonucuna göre değişkenler eşbütünleşiktir. Dolayısıyla değişkenler arasındaki eşbütünleşme ilişkisi ARDL yöntemi ile analiz edilmiştir. ARDL model tahmininde değişkenlerinin gecikme uzunlukları sırasıyla 2, 0, 4, 5, 0 olarak belirlenmiş olup, değişkenler arasındaki kısa ve uzun dönem ilişkisi ARDL (2, 0, 4, 5, 0) modeli ile analiz edilmiş ve analiz sonuçları Tablo 5'te sunulmuştur.

Tablo 5: ARDL (2, 0, 4, 5, 0) Modeli Tahmin Sonuçları

ARDL (6; anphf, anhhf, apm_h, anphm, anhhm)				
Bağımlı Değişken: anphf	Kısa Dönem Sonuçları			
Bağımsız Değişkenler	Katsayı	Standart Hata	t İstatistiği	Olasılık
ECT*	-0,8220	0,0863	-9,5214	0,0000*
anphf _{t-1}	0,2806 (0,2807)	0,0885	3,1688	0,0029*
Δapm_h	0,0276	0,4813	0,0573	0,9546
Δapm_h _{t-1}	3,0534 (2,4243)	0,5470	5,5821	0,0000*
Δapm_h _{t-2}	3,3014 (2,6333)	0,6878	4,7997	0,0000*
Δapm_h _{t-3}	1,8632 (1,4931)	0,8236	2,2623	0,0290*
Δanphm	-0,0008 (-2,8091)	6,55E-05	-12,0218	0,0000*
Δanphm _{t-1}	-0,0002 (-0,5908)	3,42E-05	-4,8345	0,0000*
Δanphm _{t-2}	-0,0002 (-0,5392)	2,67E-05	-5,6732	0,0000*
Δanphm _{t-3}	-0,0002 (-0,6073)	2,58E-05	-6,6128	0,0000*
Δanphm _{t-4}	-0,0001 (-0,3629)	3,15E-05	-3,2422	0,0024*
EC= anphf- (0,2075*anhhf-1,0235*apm_h-0,0007*anphm+0,0000*anhhm + 2,3643)				
Uzun Dönem Sonuçları				
anhhf	0,2075 (0,1393)	0,1014	2,0457	0,0472*
apm_h	-1,0235 (-0,8090)	0,4961	-2,0628	0,0455*
anphm	-0,0007 (-2,4236)	0,0003	-2,0900	0,0429*
anhhm	2,75E-07 (0,9875)	1,20E-07	2,2969	0,0268*
sabit	2,3643	0,8634	2,7384	0,0091*
Not:1. * Katsayıların %10 önem düzeyinde anlamlı olduğunu belirtmektedir. 2. ARDL modeli kısıtlı sabit ve trendsiz seçim ile tahmin edilmiştir. 3. Parantez “()” içerisindeki rakamlar değişkenin esneklik sayısını ifade etmektedir. 4. EC “Hata Düzeltme” anlamına gelmektedir.				

Tablo 5'te görüldüğü üzere, kısa dönem hata düzeltme (ECT) katsayısı %5 önem düzeyinde istatistiksel olarak anlamlı ve teorik beklentilere uygun olarak negatif işaretlidir. Buna göre, kısa dönemde yaşanan bir şok sonucu piyasa yaklaşık 1,2 ayda (=1/0,8219) dengeye gelmektedir. Değişkenlere ait kısa dönem tahmin sonuçları incelendiğinde, Ankara perakende hıyar ürününün bir dönem önceki

($anphf_{t-1}$) fiyatında yaşanan %1'lik artış Ankara perakende hıyar fiyatını ($anphf$) %0,28 oranında ve pozitif yönde etkilemektedir. Ankara hal-Ankara perakende toplam hıyar maliyeti (apm_h) hariç maliyetinin bir (apm_h_{t-1}), iki (apm_h_{t-2}) ve üç (apm_h_{t-3}) önceki dönem değeri de Ankara perakende hıyar fiyatını sırasıyla %2,42, %2,63 ve %1,49 oranlarında pozitif yönde etkilemektedir. Diğer taraftan bulgular, Ankara perakende hıyar miktarının ($anphm$) Ankara perakende hıyar fiyatı ($anphf$) üzerindeki etkisinin negatif olduğunu ve Ankara perakende hıyar miktarındaki %1'lik artışın Ankara perakende hıyar fiyatında %2,80 oranında azalışa neden olduğunu ortaya koymuştur. Ankara perakende hıyar miktarının bir ($anphm_{t-1}$), iki ($anphm_{t-2}$), üç ($anphm_{t-3}$) ve dört ($anphm_{t-4}$) dönem önceki değeri de Ankara perakende hıyar fiyatını negatif yönde etkilemektedir. Ankara perakende hıyar miktarındaki bir, iki, üç ve dört dönem önce gerçekleşen %1'lik artış, Ankara perakende hıyar fiyatını sırasıyla %0,59, %0,54, %0,61 ve %0,36 düşürmektedir.

Uzun dönem tahmin sonuçlarına göre tüm katsayılar %5 önem düzeyinde istatistiksel olarak anlamlı olup, uzun dönemde Ankara perakende hıyar fiyatı ($anphf$) ile Ankara hal hıyar fiyatı ($anhhf$) ve Ankara hal hıyar miktarı ($anhhm$) arasında pozitif Ankara hal-Ankara perakende toplam hıyar maliyeti (apm_h) ve Ankara perakende hıyar miktarı ($anphm$) ile ise negatif ilişki söz konusudur. Ankara hal hıyar fiyatındaki %1'lik artış Ankara perakende hıyar fiyatında ($anphf$) %0,13 oranında artışa neden olurken miktarda ($anphm$) ortaya çıkan %1'lik artış yaklaşık %0,99'lük bir artışa neden olmaktadır. Öte yandan, Ankara hal-Ankara perakende toplam hıyar maliyeti (apm_h) Ankara perakende hıyar fiyatını %0,80 oranında, Ankara perakende hıyar miktarı ($anphm$) ise %2,42 oranında azaltmaktadır. Model sonuçları bir bütün olarak değerlendirildiğinde, Ankara perakende hıyar fiyatının ($anphf$) Ankara hal hıyar fiyatı ($anhhf$) ile arasında pozitif yönlü ilişki olması tam rekabet koşullarına uygunken; Ankara hal-Ankara perakende toplam hıyar maliyeti (apm_h) ile arasında negatif yönlü ilişkinin varlığı tam rekabet piyasası koşullarına uygun değildir. Ankara perakende hıyar fiyatının ($anphf$) Ankara perakende hıyar miktarı ($anphm$) ile arasında negatif; Ankara hal hıyar miktarı ($anhhm$) ile arasında pozitif yönlü ilişki olması nedeniyle tam rekabet piyasası ek koşulu ($H_0: anphm > 0$ ve $anhhm < 0$; tam rekabet koşulları geçerli) sağlanmamaktadır. Bu bulgular ise, hıyarın Ankara hal ve Ankara perakende

tedarik zincirindeki piyasa yapısının aksak rekabet koşullarında gerçekleştiğini ifade etmektedir.

3.3. Antalya Hal - İstanbul Hal Tedarik Zincirine ait Pazar Gücü Analizi

Hıyar ürünü için üretim bölgesi hal (Antalya) – tüketim bölgesi hal (İstanbul) tedarik aşamasındaki pazar gücü de 2014 - 2022 yıllarına ait örtüaltı dönemi verileri kullanılarak analiz edilmiştir. Pazar gücü analizinde kullanılan veri seti, örtüaltı dönemdeki İstanbul hal hıyar fiyatı (*ihhf*), Antalya hal - İstanbul hal tedarik zinciri boyunca katlanılan toplam maliyeti (*aihm_h*), İstanbul hal hıyar miktarı (*ihhm*) ve Antalya toplam hıyar miktarı (*ahhm*) değişkenlerini içermektedir. Analiz bulgularında sahte regresyon problemi ile karşılaşmamak için serilerin durağan olup olmadığı eğer durağan iseler kaçınıcı derecede durağan oldukları ADF ve PP birim kök testleri ile sınanmıştır (Ek-1). ADF ve PP birim kök testi sonuçlarına göre değişkenlerin diğer tedarik zincirlerinde olduğu gibi farklı düzeylerde durağan oldukları tespit edilmiştir. Değişkenlere ait bütün seriler aynı düzeyde durağan olmadığından seriler arasındaki eşbütünleşme ilişkisi ARDL sınır testi yaklaşımı ile analiz edilmiştir. Modelin analizinde kullanılacak matematiksel kalıbı tespit etmek için model tüm matematiksel fonksiyon kalıpları kullanılarak analiz edilmiştir. Bunlar arasında çift logaritmik matematiksel kalıp gerek değişkenlerin beklenen işaretleri gerek de anlamlılıkları bakımından daha üstün sonuçlar vermesi sebebiyle tercih edilmiştir. Uygulanacak analizlerin güvenilirliği amacıyla ilk olarak modele ait optimal gecikme uzunluğu LR, FPE, SC ve HQ bilgi kriterlerinden yararlanılarak test edilmiştir. Test sonucunda optimal gecikme uzunluğu 9 olarak belirlenmiştir. ARDL sınır testi tahmini öncesinde otokorelasyon (Breusch-Godfrey LM Testi=0,4395) ve değişen varyans (Breusch-Pagan-Godfrey F-istatistik=0,4906) sorununun bulunup bulunmadığı, normallik varsayımının (Jarque Bera testi=0,4378) sağlanıp sağlanmadığı ve spesifikasyon hatasının (Ramsey Reset test olasılık=0,3589) var olup olmadığı araştırılmış ve VAR(9) modelinin temel istatistikleri sağladığı tespit edilmiştir. Son olarak, modelin istikrar koşulu, Cusum ve Cusum kare testleri (Ek-2) ile incelenmiş ve test sonuçları modele ait artıkların %5 anlamlılık düzeyinde güven sınırları içerisinde olduğunu ortaya koymuştur. Model analizi öncesi yapılan testleri takiben değişkenler arasında eşbütünleşme ilişkisinin varlığı, ARDL sınır testi yaklaşımıyla araştırılmıştır (Tablo 6). Tablo 6'da yer alan

sınır testi sonuçlarına göre değişkenlerin eşbütünlük, yani değişkenler arasında uzun dönemli bir ilişkinin olduğu sonucuna ulaşılmıştır.

Tablo 6: ARDL Sınır Testi

k	F İstatistiği	Kritik Değerler	I(0)-Alt sınır	I(1)-Üst sınır
4	5,5416	%10%	1,90	3,01
		%5	2,26	3,48
		%2,5	2,62	3,90
		%1	3,07	4,44

Not: k modeldeki açıklayıcı değişken sayısıdır. Kritik değerler Pesaran vd. (2001: 300)'deki Tablo CI(I)'den alınmıştır.

Tablo 7: ARDL (8, 1, 1, 0, 0) Modeli Tahmin Sonuçları

ARDL(9; <i>lihhf</i> , <i>lahhf</i> , <i>laihm_h</i> , <i>lihhm</i> , <i>lahhm</i>)				
Bağımlı Değişken: <i>lihhf</i>	Kısa Dönem Sonuçları			
Bağımsız Değişkenler	Katsayı	Standart Hata	t İstatistiği	Olasılık
<i>ECT</i> *	-0,4972	0,0899	-5,5272	0,0000*
$\Delta lihhf_{t-1}$	0,4701	0,1246	3,7716	0,0005*
$\Delta lihhf_{t-2}$	0,2465	0,1306	1,8861	0,0667***
$\Delta lihhf_{t-3}$	0,2091	0,1150	1,8177	0,0768***
$\Delta lihhf_{t-4}$	0,4303	0,1480	2,9062	0,0060*
$\Delta lihhf_{t-5}$	0,3772	0,1272	2,9641	0,0052*
$\Delta lihhf_{t-6}$	-0,0589	0,1233	-0,4775	0,6356
$\Delta lihhf_{t-7}$	0,2823	0,1115	2,5312	0,0155**
$\Delta lahhf$	0,1121	0,1001	1,1204	0,2694
$\Delta laihm_h$	2,1767	0,4936	4,4098	0,0001*
<i>duaihm_h</i>	-0,0976	0,0578	-1,6879	0,0994***
$EC = lihhf - (-0,5599 * lahhf - 0,7294 * laihm_h - 0,5294 * lihhm$				
Uzun Dönem Sonuçları				
<i>lahhf</i>	-0,5598	0,2560	-2,1865	0,0348**
<i>laihm_h</i>	-0,7294	0,1878	-3,8824	0,0004*
<i>lihhm</i>	-0,5294	0,1538	-3,4422	0,0014*
<i>lahhm</i>	0,4264	0,1372	3,1072	0,0035*

Not: 1. *, ** ve *** işaretleri sırası ile katsayıların %1, %5 ve %10 önem düzeyinde anlamlı olduğunu belirtmektedir.
2. Değişken tanımlarının başında yer alan "I" harfi değişkenin doğal logaritmasının alındığını ifade etmektedir.
3. Modelde yer alan *duaihm_h* kukla değişkeni Antalya hal-İstanbul hal toplam maliyet (*aihm_h*) veri setinden elde edilmiş kukla değişkendir. Pandemi sürecine bağlı olarak maliyet artışı yaşanmış olduğu 2019 Aralık ayı ve sonrası için "1" diğer aylar için ise "0" değerini almaktadır.
4. ARDL modeli sabitsiz ve trendsiz seçim ile tahmin edilmiştir.
5. EC "Hata Düzeltme" anlamına gelmektedir.

Değişkenler arasında eşbütünlük ilişkisi bulunması üzerine değişkenler arasındaki uzun ve kısa dönem ilişkisi, ARDL yöntemi ile analiz edilmiştir. ARDL

analizine geçmeden önce değişkenlerinin gecikme uzunlukları belirlenmiş ve değişkenler arasındaki kısa ve uzun dönem ilişki, ARDL (8, 1, 1, 0, 0) modeli ile analiz edilmiştir. ARDL modeli tahmin sonuçları, Tablo 7'de sunulmuştur.

Tablo 7'de sunulan ARDL kısa dönem analiz bulguları değerlendirildiğinde, hata düzeltme katsayısının (*ECT*) istatistiksel olarak anlamlı ve teorik beklentilere uygun olduğu tespit edilmiştir. Hata düzeltme mekanizması, kısa dönemde ortaya çıkan sapmayı her dönem %49,7 oranında azaltarak yaklaşık 2 ayda (1/0,4972) piyasayı tekrar dengeye taşımaktadır. Kısa dönem tahmin sonuçlarına göre, İstanbul hal hıyar fiyatının bir (*lihhf_{t-1}*), iki (*lihhf_{t-2}*), üç (*lihhf_{t-3}*), dört (*lihhf_{t-4}*), beş (*lihhf_{t-5}*) ve yedi (*lihhf_{t-7}*) dönem önceki değeri ile cari dönem İstanbul hal hıyar fiyatı arasında anlamlı ve pozitif yönlü ilişki bulunmaktadır. Tahmin edilen katsayılara göre, fiyatlarda yaşanan %1'lik artış İstanbul hal hıyar fiyatını sırasıyla %0,47, %0,24, %0,21, %0,43, %0,38 ve %0,28 oranında artırmaktadır. Tablo 7'ye göre kısa dönemde Antalya hal-İstanbul hal tedarik zinciri boyunca katlanılan toplam maliyeti (*laihm_h*) ile İstanbul hal hıyar fiyatı arasında anlamlı ve pozitif yönlü bir ilişki olup; toplam hıyar maliyetindeki %1'lik artış İstanbul hal hıyar fiyatını %2,17 oranında artırmaktadır. Antalya hal - İstanbul hal tedarik zinciri boyunca katlanılan toplam maliyetinin kukla değişkeni (*duaihm_h*) ise, kısa dönemde İstanbul hal hıyar fiyatını negatif yönde etkileyerek İstanbul hal hıyar fiyatının düşmesine neden olmaktadır. ARDL uzun dönem tahmin sonuçlarına göre ise tüm değişkenler %10 önem düzeyinde istatistiksel olarak anlamlıdır. Bulgulara göre, Antalya hal hıyar fiyatı (*lahhf*) ile İstanbul hal hıyar fiyatı (*lihhf*) arasında negatif yönlü ilişki olup; Antalya hal hıyar fiyatındaki (*lahhf*) %1'lik artış uzun dönemde İstanbul hal hıyar fiyatını (*lihhf*) %0,56 oranında düşürmektedir. Antalya hal - İstanbul hal tedarik zinciri boyunca katlanılan toplam maliyeti (*laihm_h*) ile İstanbul hal hıyar fiyatı arasında ise negatif yönlü bir ilişki vardır. Buna göre toplam hıyar maliyetindeki %1'lik artış İstanbul hal hıyar fiyatını %0,73 oranında azaltmaktadır. Diğer yandan, İstanbul hal hıyar miktarı (*lihhm*) ile İstanbul hal hıyar fiyatı (*lihhf*) arasında bulunan negatif yönlü ilişki, İstanbul hal hıyar miktarındaki (*lihhm*) %1'lik artışın uzun dönemde İstanbul hal hıyar fiyatını (*lihhf*) %0,53 oranında azalttığını göstermektedir. Son olarak, Antalya toplam hıyar miktarı (*lahhm*) ile İstanbul hal hıyar fiyatı (*lihhf*) pozitif yönlü ilişkilidir. Bu ilişkide, Antalya toplam hıyar miktarında (*lahhm*) gerçekleşen %1'lik artış İstanbul hal hıyar fiyatını (*lihhf*) %0,43 oranında artırmaktadır. Özetle, uzun dönem ARDL tahmin sonuçları baz alındığında; modelde yer alan

değişkenlerin tam rekabet piyasasının varlığına yönelik geliştirilen yeterlilik koşulunu sağlamadığı görülmektedir. Diğer bir ifadeyle, yeterlilik varsayımına yönelik oluşturulan sıfır hipotezi (Antalya hal hıyar fiyatı ($lahhf > 0$) ile Antalya hal - İstanbul hal hıyar maliyeti ($laihm_h > 0$) değişkenlerinin katsayısı sıfırdan büyüktür) reddedilmekte; “aksak rekabet piyasası vardır” alternatif hipotezi ise kabul edilmektedir. Ayrıca analiz bulguları, tam rekabet piyasasının varlığını sınanan ek varsayımın da sağlanmadığını göstermektedir. Keza bulgulara göre, İstanbul hal hıyar miktarı ($lihhm$) ile Antalya hal hıyar miktarı ($lahhm$) değişkenlerine ait katsayılar sıfırdan farklı ve İstanbul hal hıyar miktarının katsayısı negatif ($lihhm < 0$); Antalya hal hıyar miktarının katsayısı ise pozitifdir. ($lahhm > 0$). Elde edilen bulgular sonucunda hıyar ürününe ait Antalya hal-İstanbul hal tedarik zincirinin tam rekabet piyasası gibi hareket etmediği anlaşılmaktadır.

3.4. İstanbul Hal - İstanbul perakende Tedarik Zincirine ait Pazar Gücü Analizi

Hıyar ürünü için üretim-tüketim bölgesi hal tedarik sürecine ait pazar gücü analizini takiben aynı ürünün İstanbul hal ve İstanbul perakende tedarik zinciri için pazar gücü analiz edilmiştir. Analize geçmeden önce değişkenlerin durağan olup olmadıkları ADF ve PP birim kök testlerinden yararlanılarak analiz edilmiştir (Ek-1). Yapılan analizde; modelde yer alan veri setlerinin (İstanbul perakende hıyar fiyatı ($iphf$), İstanbul hal hıyar fiyatı ($ihhf$), hıyar ürünü için İstanbul hal-İstanbul perakende tedarik zinciri boyunca katlanılan toplam maliyet (ipm_h), İstanbul perakende hıyar miktarı ($iphm$) ve İstanbul hal hıyar miktarı ($ihhm$)) tamamının trendsiz-sabitsiz modelde birinci sıra fark durağan oldukları belirlenmiştir. Bu nedenle değişkenler arasındaki eşbütünlüşme ilişkisi Johansen Eşbütünlüşme testi ile analiz edilmiştir. Modelin tahmininde en iyi sonucu veren logaritmik-doğrusal matematiksel fonksiyon kalıbı tercih edilmiştir. Johansen Eşbütünlüşme testine geçmeden önce tahmini gerçekleştirilecek olan VAR modeli için uygulanacak analizlerin güvenilirliği açısından LR, FPE ve HQ bilgi kriterlerinden yararlanılarak ve optimal gecikme uzunluğu 5 olarak belirlenmiştir. Modelin optimal gecikmesi belirlendikten sonra VEC(p-1) model tahminin güvenilir sonuçlar vermesi açısından modele tanısallık testleri uygulanmıştır. Uygulanan tanısallık testleri sonucunda; VEC Artık Serisel Korelasyon LM test olasılık değerine (0,6408) göre modelde değişen varyans sorununun olmadığı, VEC Artık Değişen Varyans ki-kare olasılık değerine

(0,2824) göre modelde otokorelasyon probleminin olmadığı ve VEC Artık Normallik Jarque-Bera test olasılık değerine (0,9075) göre hata terimlerinin normal dağılım sağladığı sonucuna ulaşılmıştır. Ayrıca istikrar koşulu, AR Karakteristik Polinomunun Ters Kök çemberi ile test edilmiş (Ek-3) ve birkaç kökün birim çember üzerinde yer aldığı belirlenmiştir. Çemberin üzerindeki modül, çembere ait kabul edildiğinden modelin istikrar koşulunu sağladığı kabul edilmiştir (Simawu vd., 2014; Oriakhi, 2021). Temel varsayımları sağlayan model için Johansen Eşbütünleşme testi ile değişkenler arasındaki eşbütünleşme ilişkisi incelenmiştir. Analize geçmeden önce Johansen kısıtsız eşbütünleşme rank testi ile VEC(p-1) modelinde kaç tane eşbütünleşme ilişkisinin bulunduğu araştırılmıştır (Tablo 8). Tablo 8'deki iz ve maksimum öz değer test istatistik olasılık değerlerine göre modelde en az 3 adet eşbütünleşik denklem olduğu görülmektedir. Bu durum değişkenler arasında uzun dönemli bir ilişkinin olduğuna işaret etmektedir.

Tablo 8: Johansen Kısıtsız Eşbütünleşme Rank Testi

Hipotezler		Öz Değer (Eigenvalue)	İz Test İstatistiği	Olasılık**	Mak. Öz Değer Test İstatistiği	Olasılık**
H0	H1					
r=0	r=1	0,6060	129,7974	0,0000*	52,1721	0,0002*
r<1	r=2	0,4734	77,6252	0,0001*	35,9167	0,0048*
r<2	r=3	0,3633	41,7085	0,0086*	25,2817	0,0186*
r<3	r=4	0,2125	16,4267	0,1554	13,3826	0,1192
r<4	r=5	0,0529	3,0440	0,5725	3,0440	0,5725

Not: 1. * % 5 önem düzeyinde anlamlılığı göstermektedir.
 2. ** MacKinnon-Haug-Michelis (1999)'e göre olasılık (p-values) değerlerini gösterir.

Buradan hareketle, değişkenler arasındaki kısa ve uzun dönem ilişki, VECM yöntemi aracılığıyla analiz edilmiş ve elde edilen sonuçları Tablo 9'da sunulmuştur. Tablo 9'da sunulan VEC(4) modeli kısa dönem tahmin sonuçlarında yer alan hata düzeltme (ECT) katsayısının değeri negatif ve istatikselsel olarak anlamlıdır. Hata düzeltme katsayısı, kısa dönemde yaşanabilecek şokların uzun dönemde dengeye geleceğine işaret etmektedir. Buna göre kısa dönemde oluşacak bir sapma durumunda piyasa yaklaşık 13 ayda (=1/0,0745) dengeye gelmektedir. Modelin kısa dönem tahmin sonuçları incelendiğinde, İstanbul hal-perakende tedarik zincirine ait maliyetin dört dönem gecikmeli değeri ile İstanbul perakende hıyar miktarı ve İstanbul hal hıyar miktarına ait katsayılar hariç diğer değişkenler ve değişkenlerin gecikmeli değerleri istatikselsel olarak anlamsızdır. İstatikselsel olarak anlamlı olan dört dönem önceki İstanbul hal - İstanbul perakende toplam hıyar maliyetindeki değişim ($\Delta lipm_h_{t-4}$), İstanbul perakende hıyar fiyatını pozitif yönde ve %1,18 büyüklüğünde

etkilemektedir. Buna göre, dört dönem önce toplam hıyar maliyetinde gerçekleşecek %1'lik artış İstanbul perakende hıyar fiyatını %1,18 oranında artırmaktadır.

Tablo 9: VEC Model Tahmin Sonuçları

VECM (4; <i>liphf</i> , <i>lihhf</i> , <i>lipm_h</i> , <i>lipm</i> , <i>lihmm</i>)			
Bağımlı Değişken: <i>liphf</i>	Kısa Dönem Sonuçları		
Bağımsız Değişkenler	$\Delta liphf$		
<i>ECT</i> *	-0,0745	(0,0207)	[-3,5971]*
$\Delta liphf_{t-1}$	-0,0412	(0,1713)	[-0,2408]
$\Delta liphf_{t-2}$	-0,0945	(0,2010)	[-0,4702]
$\Delta liphf_{t-3}$	0,0531	(0,2363)	[0,2247]
$\Delta liphf_{t-4}$	0,2007	(0,2095)	[0,9582]
$\Delta lihhf_{t-1}$	0,0787	(0,1988)	[0,3959]
$\Delta lihhf_{t-2}$	0,1415	(0,2032)	[0,6967]
$\Delta lihhf_{t-3}$	0,1024	(0,1798)	[0,5698]
$\Delta lihhf_{t-4}$	-0,2495	(0,1794)	[-1,3908]
$\Delta lipm_h_{t-1}$	0,0156	(0,6909)	[0,0225]
$\Delta lipm_h_{t-2}$	-0,1468	(0,7624)	[-0,1925]
$\Delta lipm_h_{t-3}$	-0,3272	(0,7091)	[-0,4615]
$\Delta lipm_h_{t-4}$	1,1868	(0,5855)	[2,0268]*
$\Delta lipm_{t-1}$	-2,3293	(0,6233)	[-3,7367]*
$\Delta lipm_{t-2}$	-1,5953	(0,5758)	[-2,7701]*
$\Delta lipm_{t-3}$	-1,3727	(0,5831)	[-2,3540]*
$\Delta lipm_{t-4}$	-1,4849	(0,4692)	[-3,1644]*
$\Delta lihmm_{t-1}$	0,7167	(0,2413)	[2,9705]*
$\Delta lihmm_{t-2}$	0,4492	(0,2036)	[2,2056]*
$\Delta lihmm_{t-3}$	0,4952	(0,1945)	[2,5460]*
$\Delta lihmm_{t-4}$	0,4704	(0,1639)	[2,8696]*
$EC = liphf - (2,9485 * lihhf - 4,5946 * lipm_h - 44,7144 * lipm + 16,0939 * lihmm + 101,6904)$			
Uzun Dönem Sonuçları			
<i>lihhf</i>	2,9485	(0,9274)	[3,1791]*
<i>lipm_h</i>	-4,5946	(2,0273)	[-2,2663]*
<i>lipm</i>	-44,7144	(8,1309)	[-5,4993]*
<i>lihmm</i>	16,0939	(3,4352)	[4,6849]*
<i>sabit</i>	101,6904	(17,7271)	[5,7364]*
Not: 1. Parantez () içerisindeki değerler standart hataların değerlerini ve köşeli parantez [] içerisindeki değerler de t istatistik değerlerini göstermektedir.			
2. * Katsayıların t istatistik değerlerinin anlamlı olduğunu belirtmektedir.			
3. Tek yönlü t tablo 0,05 düzey ve serbestlik derecesi(n-1) 61 olan tablo değeri 1,671 olarak belirlenmiştir.			
4. Değişken kodlamalarının başındaki "l" harfi logaritması alınmış değişkenleri göstermektedir.			

İstanbul perakende hıyar miktarındaki bir ($\Delta liphm_{t-1}$), iki ($\Delta liphm_{t-2}$), üç ($\Delta liphm_{t-3}$) ve dört ($\Delta liphm_{t-4}$) dönem önceki %1'lik artışlar ise İstanbul perakende hıyar fiyatını sırasıyla %2,32, %1,60, %1,37 ve %1,48 oranında düşürmektedir. Bulgular ayrıca, İstanbul hal hıyar miktarındaki değişimin bir ($\Delta lihhm_{t-1}$), iki ($\Delta lihhm_{t-2}$), üç ($\Delta lihhm_{t-3}$) ve dört ($\Delta lihhm_{t-4}$) dönem önceki değerleri ile İstanbul perakende hıyar fiyatı arasında pozitif yönlü ilişki olduğunu ortaya koymuştur. Buna göre, İstanbul hal hıyar miktarında söz konusu dönemlerde gerçekleşen %1'lik artışların İstanbul perakende hıyar fiyatını sırasıyla %0,72, %0,45, %0,50 ve %0,47 oranında artırmaktadır. VECM(4) uzun dönem tahmin sonuçlarına göre, modelde yer verilen değişkenlerin tamamı %5 önem düzeyinde istatiksel olarak anlamlıdır. Tahmin sonuçlarına göre, İstanbul perakende hıyar fiyatı ($liphf$); İstanbul hal hıyar fiyatından ($lihhf$) ve İstanbul hal hıyar miktarından ($lihhm$) pozitif yönde etkilenirken, İstanbul hal - İstanbul perakende toplam hıyar maliyetinden ($lipm_h$) ve İstanbul perakende hıyar miktarından ($liphm$) ise negatif yönde etkilenmektedir. İstanbul hal hıyar fiyatında ($lihhf$) ve İstanbul hal hıyar miktarında ($lihhm$) ortaya çıkan %1'lik artış İstanbul perakende hıyar fiyatını sırası ile %2,95 ve %16,09 oranında artırmaktadır. İstanbul hal - İstanbul perakende tedarik zinciri boyunca katlanılan toplam maliyeti ($lipm_h$) ile İstanbul perakende hıyar miktarında ($liphm$) yaşanan %1'lik artış ise İstanbul perakende hıyar fiyatını azaltıcı yönde ve sırasıyla %4,59 ve %44,71 oranlarında etkilemektedir.

Model tahmin sonuçlarına göre İstanbul perakende hıyar fiyatı ile İstanbul hal hıyar fiyatı arasında pozitif yönlü ilişkinin varlığı, tam rekabet koşullarına uygun olduğuna yönelik çıkarım sunarken İstanbul perakende hıyar fiyatı ile İstanbul hal - İstanbul perakende toplam hıyar maliyeti arasındaki negatif yönlü ilişkinin varlığı ise piyasanın tam rekabet piyasası koşullarını sağlamadığını göstermektedir. Dolayısıyla tam rekabet piyasasının varlığını ortaya koyan gerekli koşul bu tedarik zinciri için sağlanamamaktadır. Tam rekabet piyasasının varlığına yönelik geliştirilen ek koşul varsayımları ($H_0: liphm > 0$ ve $lihhm < 0$; "tam rekabet koşulları geçerli") da sağlanamamaktadır. Dolayısıyla ilgili analiz bulguları bu tedarik zincirinde de pazar gücünün varlığına işaret etmektedir.

4. Sonuç ve Değerlendirmeler

Araştırma kapsamında ele alınan hıyar ürününün tedarik zincirinin her bir aşamasındaki pazar gücü, üretim bölgesi hal (Antalya)-tüketim bölgesi hal (İstanbul ve Ankara) ve tüketim bölgesi hal (İstanbul ve Ankara)-tüketim bölgesi perakende (İstanbul ve Ankara) tedarik zincirleri için 2014-2022 dönemine ait örtüaltı dönem aylık zaman serileri kullanılarak analiz edilmiştir. Analizlerde ilk olarak serilerin mevsimsellik içerip içermediği incelenmiştir. Mevsimsellik sınamasını takiben değişkenlerin durağan olup olmadığı, şayet durağan ise durağanlık dereceleri belirlenmiş ve aynı düzeyde durağan seriler VECM ile farklı düzeyde durağan değişkenler ise ARDL ile analiz edilmiştir.

Hıyar ürününe ait Antalya hal-Ankara hal ve Antalya hal-İstanbul hal tedarik zincirlerindeki model tahmin sonuçları dikkate alındığında, Antalya hal fiyatının gerek Ankara gerekse İstanbul hal fiyatlarını pozitif yönde etkilediği ancak bu değişkenin Ankara hal fiyatı üzerindeki etkisinin istatistiksel olarak anlamlıyken, İstanbul hal fiyatının üzerindeki etkisinin ise anlamsız olduğu tespit edilmiştir. Buna göre, Antalya hal fiyatındaki %1'lik artışın Ankara hal fiyatında %0,5'lik artışa neden olduğu belirlenmiştir. Antalya halinde ürünün satışını takiben ortaya çıkan pazarlama maliyetleri ise, Ankara halindeki ürünün fiyatı üzerinde kısa dönemde (%-1,07) negatif bir etkiye sahip olmasına rağmen bu etki uzun dönemde beklenti ile uyumlu olarak pozitifdir (%1,17). İstanbul ilinde de beklenti ile uyumlu olarak kısa dönemde maliyetler hıyar fiyatını pozitif yönde (%2,17) etkilemektedir. Maliyet artışlarından İstanbul hal fiyatları daha yüksek oranda etkilenmektedir. Bu fark haller arasındaki farklı km uzaklığıyla ve İstanbul iline ait köprü geçiş ücreti gibi diğer maliyet kalemlerinden kaynaklanmaktadır. Diğer taraftan bulgular, üretim bölgesi (Antalya) halindeki ürün miktarındaki (%1'lik) değişimin Ankara ve İstanbul hallerindeki fiyatları pozitif yönde etkilediği ancak bu değişkenin İstanbul hal fiyatı üzerine (%0,43) etkisinin istatistiksel olarak anlamlı iken, Ankara hal fiyatı üzerine etkisinin ise anlamsız olduğu tespit edilmiştir. Tüketim bölgesi hallerindeki hıyarın arz miktarı ile hal fiyatları arasındaki ilişki değerlendirildiğinde ise, arzdaki artışın gerek Ankara gerekse İstanbul hallerindeki fiyatları beklentiyle uyumlu olarak negatif yönde etkilediği tespit edilmiştir. Bu etkinin büyüklüğü Ankara ilinde oldukça düşük düzeyde (%-0,08) iken, İstanbul ilinde %-0,53'tür. Bu durum, ilin nüfusuna bağlı olarak İstanbul halinin işlem hacminden kaynaklanmaktadır. Üretim bölgesi hal (Antalya) ile tüketim bölgesi (Ankara ve İstanbul) hal tedarik zinciri pazar gücü bakımından değerlendirildiğinde; iki tedarik zincirinde de aksak

rekabet piyasasının hüküm sürdüğü görülmektedir. Bu durum, piyasada çok sayıda alıcı ve satıcı olmasına rağmen özellikle hallerde tedarik firmalarının her birinin belli başlı ürünlerin satışlarında yoğunlaşmasından kaynaklanmaktadır.

Hıyarın Ankara hal-Ankara perakende ve İstanbul hal-İstanbul perakende tedarik zincirlerindeki tahmin bulgularına göre, (Ankara-İstanbul) hal hıyar miktarları ve fiyatları, perakende düzeydeki fiyatları pozitif yönde etkilemektedir. Nitekim, tüketim bölgesi olarak hıyarın Ankara hal miktarı ve fiyatındaki %1'lik artış Ankara ili perakende fiyatlarda sırasıyla %0,98 ve %0,13'lük artışa neden olmaktadır. Bu etkiler İstanbul hali için değerlendirildiğinde, İstanbul halindeki hıyar miktarı ve fiyatlarındaki %1'lik artışlar, İstanbul ili perakende fiyatlarda sırasıyla %16,09 ve %2,95'lik artışlara neden olmaktadır. Tüketim bölgesi hallerindeki miktar ile perakende düzeydeki fiyatlar arasındaki aynı yönlü ilişkinin nedeni olarak, hal dışı satışlar ile ürünün kalite farklılıklarını dikkate alan verinin mevcut olmayışı belirtilebilir. Modelin perakende düzeyindeki hıyar miktarı ile fiyatı arasındaki bulgularına göre, perakende düzeydeki ürün miktarındaki artışın fiyatları azaltıcı yönde etkilerde bulunduğu tespit edilmiş olup etki Ankara ilinde %-2,80, İstanbul ilinde ise %-44,71'dir. Hıyarın pazar gücü model tahmini bulguları ise, Ankara hal-Ankara perakende ve İstanbul hal-İstanbul perakende tedarik zincirlerinde eksik rekabet piyasasının varlığını ortaya koymuştur. Daha spesifik olarak, analiz sonuçları hıyarın perakende aşamasında firmaların güçlü oligopol piyasası içinde hareket ettiklerini ortaya koymuştur. İlgili sonuç, firmaların hıyarı marjinal maliyetlerinin üzerinde satabilme gücüne sahip olduğunu, dolayısıyla piyasayı etkileyebilme güçlerinin bulunduğunu ifade etmektedir. Bu durum, Türkiye'deki semt pazarlarının halen sebze-meyve pazarlamasında önemini korumasına rağmen özellikle son dönemlerde perakende sektöründeki zincir marketlerin öneminin her geçen gün artmasından kaynaklanmaktadır. Nitekim, zincir marketler bir bütün olarak ölçek ekonomisine sahip olmalarından dolayı önemli avantajlara sahip olmalarına rağmen özellikle işletme giderleri yüksek olan küçük ölçekli şubeleri nedeniyle maliyet baskısı altındadırlar. Baskı, zincir marketlerin sabit giderleri ile kira, işgücü ve enerji giderlerinden kaynaklanmaktadır. Bu ise, perakende sektöründe gıda fiyatlarının düşüşünü kısıtlayan en önemli sorunlardan biri olarak görülmektedir. Bu bağlamda, şubelerin belirli bir alan/bölge genişliği için kurulmalarının ve belirli bir mesafedeki şubeleşme sayılarını düzenleyici önlemlerin alınmasının fiyat artışlarını sınırlayacağı düşünülmektedir.

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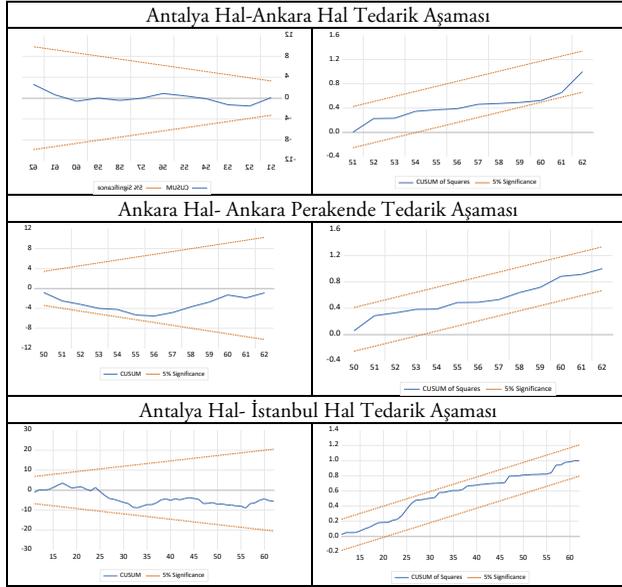
ANALYSIS OF MARKET POWER IN THE SUPPLY CHAIN OF CUCUMBER
IN GREENHOUSE CULTIVATION / ÖRTÜALTI YETİŞTİRİCİLİĞİNDE HIYAR'IN
TEDARİK ZİNCİRİNDEKİ PAZAR GÜCÜ ANALİZİ
Kübra Önder, Meryem Aytekin, Büşra Akın, Selim Adem Hatırlı, Selim Çağatay & Onur Demirel

Ek-1: ADF ve PP Birim Kök Testi Sonuçları

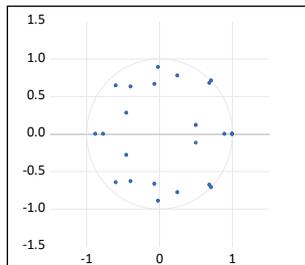
Değişken	ADF Birim Kök Testi			PP Birim Kök Testi			ADF Birim Kök Testi			PP Birim Kök Testi		
	Sabitli	Trendli	Trendsiz	Sabitli	Trendli	Trendsiz	Sabitli	Trendli	Trendsiz	Sabitli	Trendli	Trendsiz
ahhf	-16,480 (0,4517)	-30,732 (0,1227)	0,1304 (0,7198)	-2,6643*** (0,0862)	-23,414 (0,4058)	-0,6859 (0,4158)	-9,1524* (0,0000)	-9,0482* (0,0000)	-9,2309* (0,0000)	-4,7309* (0,0003)	-4,6202* (0,0023)	-4,8381* (0,0000)
ahhm	-15,823 (0,6856)	-5,7258* (0,0001)	0,4117 (0,7985)	-3,9762* (0,0028)	-5,6412* (0,0001)	-0,2288 (0,5998)	-	-7,0299* (0,0000)	-	-	-	-18,741* (0,0000)
anhhf	-25,463 (0,1104)	-11,652 (0,9076)	-1,6849*** (0,0868)	-3,1685** (0,0268)	-3,6285** (0,0355)	-0,9099 (0,3182)	-	-	-	-	-	-9,2912* (0,0000)
anhhm	-18,149 (0,3694)	-31,767 (0,1004)	-10,723 (0,2529)	-2,8400*** (0,0587)	-29,813 (0,1458)	-10,632 (0,2569)	-3,2136** (0,0250)	-3,2562*** (0,0856)	-3,0570* (0,0029)	-6,2630* (0,0000)	-	-6,3669* (0,0000)
aahm_h	30,224 -10,000	15,223 -10,000	26,744 (0,9979)	51,264 -10,000	28,238 -10,000	36,190 (0,9999)	-3,5375** (0,0102)	-4,4847* (0,0035)	-2,9479* (0,0038)	-3,5375** (0,0102)	-	-
anphf	-22,012 (0,2082)	-29,321 (0,1607)	-0,0700 (0,6551)	-24,235 (0,1397)	-23,725 (0,3899)	-0,4825 (0,5028)	-8,3068* (0,0000)	-8,2615* (0,0000)	-8,3888* (0,0000)	-3,0885** (0,0328)	-4,1425* (0,0094)	-3,1765* (0,0020)
anphm	-11,306 (0,6970)	-30,987 (0,1174)	-11,442 (0,2269)	-2,8328*** (0,0596)	-29,926 (0,1427)	-0,7168 (0,4021)	-3,4244** (0,0146)	-3,5282** (0,0471)	-	-6,4263* (0,0000)	-6,3190* (0,0000)	-6,5045* (0,0000)
apm_h	69,734 -10,000	50,003 -10,000	58,179 -10,000	61,841 -10,000	58,734 -10,000	35,005 (0,9998)	-3,6970* (0,0065)	-5,0002* (0,0007)	-2,9229* (0,0041)	-3,9638* (0,0030)	-5,4653* (0,0002)	-2,8926* (0,0045)
ihhf	-20,796 (0,2535)	-	-13,894 (0,1515)	-2,7823*** (0,0667)	-30,839 (0,1194)	-0,6515 (0,4309)	-5,1235* (0,0001)	-5,0711* (0,0006)	-5,1754* (0,0000)	-4,9167* (0,0001)	-4,5129* (0,0032)	-5,0127* 0,0000
ihhm	-2,9890** (0,0423)	-8,8906* (0,0000)	14,870 (0,9646)	-2,3822 (0,1509)	-24,013 (0,3752)	-0,5877 (0,4587)	-7,4318* (0,0000)	-7,8337* (0,0000)	-	-	-37,124 (0,3028)	-2,6941* (0,0078)
aihm_h	27,734 -10,000	12,516 (0,9999)	25,234 (0,9969)	49,598 -10,000	27,201 -10,000	35,872 (0,9999)	-3,3806** (0,0156)	-4,2812* (0,0063)	-2,8187* (0,0055)	-3,2585** (0,0214)	-4,2930* -0,0061	-2,6545* (0,0087)
iphf	15,679 0,9993	-6,3212* 0,0000	22,623 0,9938	-0,5779 0,8674	-16,861 0,7455	0,8166 0,8857	-6,7289* 0,0000	-7,1629* 0,0000	-6,3431* 0,0000	-4,1510* 0,8674	-4,0783* 0,0112	-4,1873* 0,0001
ihhm	-	-8,8907** 0,0000	14,871 0,9646	-23,822 0,1509	-8,0342* 0,0000	-0,5877 0,4587	-7,4319* 0,0000	-7,8338* 0,0000	-	-	0,0891 0,0290	-2,6942* 0,0078
ipm_h	34,209 10,000	40,801 10,000	33,398 0,9997	1,9296 0,9998	-0,3292 0,9880	2,7753 0,9984	-6,0290* 0,0000	-6,6768* 0,0000	-6,3809* 0,0000	-3,1375** 0,0290	-4,2979* 0,0060	-2,9949* 0,0033
Kritik Değer												
1%	-35,550	-41,338	-26,077	-35,441	-41,184	-26,043	-35,575	-41,373	-26,077	-35,441	-41,184	-26,041
5%	-29,155	-34,937	-19,469	-29,109	-34,865	-19,463	-29,166	-34,953	-19,469	-29,109	-34,865	-19,464
10%	-25,956	-31,757	-16,130	-25,931	-31,715	-16,133	-25,961	-31,767	-16,130	-25,931	-31,715	-16,133

Not: 1. * %1, ** %5, *** %10 önem düzeyinde anlamlıdır.
2. Test istatistikleri için p-değerleri, parantez () içindedir.

Ek-2: Cusum ve Cusum Kare Testleri Sonuçları



Ek-3: AR Karakteristik Polinomunun Ters Kök Çemberi



PART **II**
DEMOCRACY, CRIME,
AND POLITICAL ECONOMY

7

SUPPLY AND DEMAND OF DEMOCRACY: A COMPARATIVE ANALYSIS OF POWER BLOC AND LIPSETIAN DYNAMICS

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Abstract

This study examines the dynamics of democratization through a dual framework of supply and demand. It posits that the supply of democracy is determined by the composition and stability of the power bloc—comprising the bourgeoisie, capital elites, and emerging political alliances—while the demand for democracy is shaped by the working class and Lipsetian modernization factors, such as urbanization, industrialization, and the quality of economic development. By comparing the post-1980 democratic trajectories of South Korea, Turkey, and Brazil, the study highlights how variations in power bloc configurations and socio-economic demands influence democratic consolidation and fragility. The analysis reveals that South Korea's balanced power bloc, supported by industrial bourgeoisie and state collaboration, facilitated both economic growth and democratic sustainability. In Turkey, capital reliant on state contracts (especially in the construction sector) contributed to neoliberal authoritarianism as the dominant capital faction. In Brazil, finance capital played a role in the fall of the PT and Bolsonaro's rise, leading to a regression of democracy. Empirical findings underscore that robust urbanization, lower inequality, and inclusive industrialization are critical for sustaining democracy. This integrated approach offers a nuanced understanding of democratization, bridging structural and class-based perspectives with modernization theory.

Keywords: *Democracy, Economic Development, Modernization Theory, Power Bloc*

Jel Codes: *P1, O1, O5*

1. Introduction

Before beginning this paper, my aim was to demonstrate why South Korea possesses a more consolidated democracy compared to Turkey and Brazil. However, during the writing process, on December 4, 2024, martial law was declared in South Korea. The dissolution of parliament became a subject of discussion. As the military moved toward the parliament, many of us feared the possibility of a coup. Yet, military personnel were not allowed to enter the parliament and, without insistence, retreated to their barracks. In the following days, the president apologized for declaring martial law and pledged not to attempt such actions again.

For many, these events highlight the fragility of liberal democracy in South Korea. This view is not entirely unfounded. There has been a noticeable decline in South Korean democracy in recent years. Nevertheless, South Korea still creates the perception of having more robust democratic institutions compared to the other two countries discussed in this paper—Turkey and Brazil.

In truth, we observe the fragility of democratic institutions in many developing countries today. Following the global financial crisis, authoritarian tendencies have risen in several nations. Some countries have sunk into the quagmire of populism, and even in developed countries, the crisis of democracy has become a common topic of discussion. By the mid-2010s, liberal democracy in Brazil and Turkey had nearly collapsed, while South Korea experienced comparatively milder fluctuations. Despite once sharing similar levels of development with Turkey and Brazil, South Korea achieved higher growth rates over time and reached a more advanced stage of development. Indeed, as of 2022, South Korea ranked 19th on the Human Development Index (HDI) with a score of 0.929, compared to Turkey at 45th (0.855) and Brazil at 89th (0.760) (UNDP, 2024, pp. 27–28).

Is South Korea's higher level of democracy a result of its advanced development? According to Lipset (1959), the answer would be "yes," as he viewed democracy as a reflection of the level of development. While Lipset's modernization theory has faced substantial criticism¹, when examining countries individually and

¹ For example, Acemoglu et al. (2001); Boix and Stokes (2003); Przeworski (2000); Robinson (2006); Rueschemeyer (1992); Schmitter and Karl (1991)

comparing their democracy scores with development data, it is possible to observe a correlation between the two. However, the limitations of modernization theory bring Przeworski's (2000) survival thesis to the forefront. According to Przeworski, while higher levels of development do not automatically lead to transitions from authoritarianism to democracy, they play a crucial role in the survival of democracies during times of crisis.

Both modernization theory and the survival thesis address the demand side of democracy. However, whether in transitions from authoritarianism to democracy or in the survival of democracies during crises, the supply side of democracy is as critical as demand. The supply side of democracy, as theorized by Poulantzas (1975), is shaped by the economic power bloc. Within the economic power bloc, power is constituted not only by political parties but also by factions of capital. What matters is which faction of capital is the dominant force in power, as different factions have distinct economic policy preferences and interests. The economic policies of any ruling faction are shaped accordingly. The primary concern of the capital bloc is the continuity of capital accumulation. As long as the existing political regime—whether democratic, authoritarian, or populist—does not threaten this accumulation, capital will support its continuation. However, if the regime disrupts capital accumulation, capital factions may negotiate with the government or align with opposition forces to push for change.

Democracy, as a developmental issue, signifies the ability of individuals to have a say in determining their own living standards. Development is concerned with the composition of the opportunity set individuals face and the extent to which they can freely utilize these opportunities (Sen, 1999). The content of the opportunity set and the degree to which it is accessible are shaped by political regimes. In democratic regimes, individuals participate either directly or through their representatives in determining the scope and utilization of the opportunity set. A political regime is democratic to the extent that it does not obstruct these processes of preference formation. Therefore, a higher level of development should ideally be reflected in a more democratic regime.

Brazil, Turkey, and South Korea have all experienced both authoritarian regimes and democracy, albeit in different forms and timeframes. In Brazil and South Korea, political regimes transitioned to civilian rule in the 1980s, with democratic elections creating the appearance of consolidated democracies,

particularly in the 2000s. In Turkey, following the end of military rule in the late 1980s, previously banned political parties were allowed to participate in elections, and, for the first time since the 1960s, a civilian president was elected. The full civilianization of Turkish politics, however, occurred only in the 2010s, followed by an increasing trend of authoritarianism.

This study aims to understand the dynamics of democracy's supply and demand by comparing these three countries. Lipset's modernization theory and Przeworski's survival thesis will be utilized to examine the demand side of democracy. Poulantzas's framework of the power bloc will serve as the lens through which to analyze the supply side of democracy.

The second section of this paper will take a historical perspective on the democratic trajectories of the three countries, focusing on power blocs during the periods when they (re)embarked on democratic experiments. These periods trace back to the years leading up to the 1980s, when Brazil (1985) and South Korea (1988) transitioned to civilian rule. In Turkey, multiparty politics began in 1945, but the military frequently intervened in governance from 1960 onwards. The third section will analyze the process of democratic consolidation through the lens of power blocs. The fourth section will examine and compare the socioeconomic variables identified by Lipset's modernization theory as the conditions for democracy, discussing causality in the context of the demand side of democracy.

2. Historical Background

2.1. The Long History and Interruptions of Democracy in Brazil (1889–1985)

The establishment of the Brazilian Republic in 1889 occurred through a military coup led by Deodoro de Fonseca. This coup was notably marked by the collaboration of the coffee-producing land oligarchy, which was significant for the period (Bethell, 2018, p. 151). Although multiple parties competed for power, voting rights were restricted, barring women and illiterate men—who constituted approximately two-thirds of the eligible voting population—from participating in elections. Nevertheless, compared to the imperial era, the

political participation of urban populations represented significant progress. This period is referred to as the "Old Republic." The economy during this time was predominantly reliant on the export of primary goods, especially coffee, making the Brazilian economy vulnerable to the instabilities of the global market.

The Great Depression of 1929 severely impacted Brazil's economy, and in the following year, power was seized through a coup in 1930. Getulio Vargas, supported by the military, came to power and implemented significant changes. He introduced labor reforms to improve workers' rights, securing their support (Burns, 1993, pp. 348–350). Lessons were drawn from the vulnerabilities of a coffee-dependent economy, and industrialization policies were pursued to diversify the economy (Klein and Luna, 2023, p. 207). As a result, the industrial class gained strength while the power of the landed elites diminished during this period. In 1932, voting age was lowered to 18, and women were granted the right to vote for the first time (Bethell, 2018, p. 154). Despite these and other democratic advancements, the growing popularity of communism among the middle class (Burns, 1993, p. 354) led to the establishment of an authoritarian regime in 1937 under Vargas, who ruled until 1945 with increased political influence from the military, suspending democracy.

During the Second Republic (1945–1964), democratic rights were reinstated. In this period, the political power of the urban working class and the middle class, which was tied to the industrial sector, grew, while the political influence of rural elites diminished (Bradford, 1993, p. 396). Juscelino Kubitschek, who served as president from 1956 to 1961, faced high inflation, budget deficits, and balance of payments issues upon assuming office. To address these economic challenges, he launched development policies to accelerate industrialization (Klein and Luna, 2023, pp. 216–217). Investments were made in electricity, oil refining, and transportation infrastructure, and the automotive industry was expanded. As heavy industry's share in production increased, mortality rates declined, birth rates rose, and rural-to-urban migration accelerated. However, among the migrants were many who were illiterate, inexperienced, and without technical training, leading to difficulties in finding jobs or working for very low wages. The prevalence of poverty was reflected in the fact that a quarter of the population in the capital lived in favelas (Bradford, 1993, p. 412). Although GDP grew significantly during Kubitschek's presidency, financing these developments through budget expenditures and attempting to cover deficits by printing money

exacerbated inflationary pressures. This period of democracy came to an end in the early 1960s due to socioeconomic factors. The Cuban Revolution and the Second Vatican Council radicalized society, and the urban middle classes, fearing radical economic and social transformations, did not oppose a military intervention (Bethell, 2018, p. 158).

In 1964, democratic rights were suspended again following a military coup. Unlike previous military interventions, where the military returned governance to civilians after a short period, this time the military decided to retain power. The executive branch's power was expanded while the legislative and judicial branches were weakened (Bradford, 1993, p. 448). During this period, labor rights were curtailed, and real wages were allowed to decline. Both urban and rural unions came under strict state control. Income inequality worsened (Klein and Luna, 2023, pp. 220–222). Expansionary economic policies were implemented, alongside measures to control prices. Export-oriented manufacturing was promoted, and during 1967–1973, an average growth rate of 10% was achieved. Manufactured goods replaced coffee as the leading export (Bradford, 1993, pp. 467–469). However, the economic boom ended with the oil crisis. Rising import prices coupled with falling prices for exported raw materials led to a deteriorating balance of payments and increased external debt. Inflation surpassed 200% in 1984. Moreover, as production became more capital-intensive, unemployment rose. These adverse developments culminated in the military relinquishing governance to civilians in 1985.

2.2. Pre-Democracy in South Korea (1948–1988)

The political regime adopted at the time of South Korea's establishment in 1948 is referred to as the "First Republic." Under the leadership of Syngman Rhee, this regime evolved into a dictatorship during the 1950s (Yang, 1998, p. 160). The "April Student Revolution" of 1960 paved the way for the establishment of a democratic regime, known as the Second Republic. However, this regime was short-lived, ending with a military coup in 1961. After a two-year period under military junta rule, the Third Republic began in 1963 under the leadership of Park Chung-hee.

The Third Republic was characterized by a strong presidency, a relatively weak parliament, and administrators with military backgrounds. During this period,

five-year economic development plans were initiated, and an export-oriented industrialization regime was adopted, ushering in a phase of rapid economic growth. Exports primarily consisted of labor-intensive goods. Most of the population lived in rural areas, and as migration to cities increased, some of the new urban residents found work in industry. Due to an abundant supply of labor, wages in both rural and urban areas faced downward pressure. This surplus labor hindered the development of trade unions until the 1960s, preventing the working class from becoming a significant political actor (Im, 2020, p. 34). Meanwhile, the bourgeoisie cooperated with the state in accordance with long-term development plans. However, through mechanisms such as collaborations with foreign capital, credit allocation, and equity ratio controls, the state politically weakened the domestic bourgeoisie and rendered it dependent (Evans, 1979, p. 41).

By 1966, South Korea's labor surplus had come to an end, and wages in the agricultural sector began to be determined by the marginal productivity of labor (Fei & Ranis, 1975, pp. 49–51). The scarcity of labor marked the end of the period dominated by the production and export of low-cost, labor-intensive goods. Changes in the production structure brought about political changes as well. Under the collaboration of the state and bourgeoisie, wages were suppressed to maintain the competitive advantage of cheap labor in global markets, exacerbating tensions between the ruling bloc and wage earners. In 1972, the regime introduced the Yushin Constitution, a bureaucratic authoritarian system referred to as the Fourth Republic, to sustain the existing economic model (Im, 2020, pp. 39–40; Lee, 1990, p. 198). This system abolished competitive elections, banned strikes, and prohibited the organization of labor unions. After the assassination of Park Chung-hee in 1979, a coup occurred in 1980, and the Yushin regime persisted to some extent. However, under foreign pressure, especially from the United States, the new president, General Chun Doo-hwan, agreed to serve a single seven-year term, partially strengthening the legislative and judicial branches (Burton & Ryu, 1997, p. 7). Chun governed South Korea as a single authoritarian leader from 1981 until peacefully transferring power to a democratic regime at the end of his term. From 1987 onwards, South Korea entered the era of competitive elections, marking the Fifth Republic.

The Fifth Republic also signified the end of the military's approximately three-decade dominance in South Korean politics. During the presidency of Kim

Young-sam, former presidents General Chun Doo-hwan and General Roh Tae-woo were imprisoned for crimes committed during the 1980s, and the military did not exhibit significant political resistance to these actions (Burton & Ryu, 1997, p. 1). From this point onward, the central issue in South Korea's political economy became the consolidation of democracy.

2.3. The Unfinished Consolidation of Democracy in Turkey (1923–1987)

From the establishment of the Republic of Turkey in 1923 until the first competitive and free elections in 1950, Turkey underwent a single-party period led by Mustafa Kemal Atatürk (1923–1938) and İsmet İnönü (1939–1950). This period focused on a "modernization" project, implementing reforms and fostering closer ties with the West (Satana, 2008, p. 364). Development during this era was driven by state-built infrastructure and factories. In this early phase of capitalist production relations, an organized working class had yet to emerge. Similarly, there was no industrial bourgeoisie; instead, a commercial bourgeoisie composed of bureaucrats and large landowners prevailed (Duman, 2007, p. 38).

In 1950, Turkey transitioned to a multi-party system, and the Democrat Party (DP) won the elections, remaining in power under the leadership of Adnan Menderes until 1960. Although the DP initially governed with liberal goals, it grew increasingly authoritarian over the years, both within the party and in national governance (Ahmad, 1996). The press, universities, and even opposition parties faced suppression whenever possible. According to Heper (2005), from the early 1950s onward, the military perceived itself as the guardian of Kemalism. This self-assigned role culminated in a coup in 1960, ending DP rule. During this period, development efforts continued, with industrialization pursued through state economic enterprises. Mechanization in agriculture and the developmental disparities between rural and urban areas accelerated rural-to-urban migration. However, many new urban residents were unable to find formal employment, resulting in the growth of the informal sector (Arat & Pamuk, 2019, p. 37).

The 1960 coup led to the drafting of a new constitution, which, despite containing more liberal and democratic elements, increased the military's influence in politics. This period, often referred to as the "Second Republic," was

marked by significant institutional changes aimed at achieving social justice and planned economic development (Ahmad, 1996, p. 236). Key elements included the establishment of a constitutional court, the enhanced role of the Senate within the parliamentary system, state-guided development plans, and expanded labor rights. Simultaneously, the institutionalization of military influence in politics was achieved through the establishment of the National Security Council.

During this era, governments were careful to operate within the boundaries defined by the military. At times, the military intervened directly, such as in 1971, when it forced the government to resign (Turan, 2020, p. 28). Industrialization remained a central goal for all governments of the period. However, imbalances created by import-substitution policies, coupled with the oil crisis and an arms embargo, eventually plunged the economy into crisis. Declining profits in the capitalist class, the influence of a highly organized labor force, and global economic shifts created a deadlock in economic policies (Orhangazi, 2020, pp. 74–75). Alongside the ongoing radical right-left conflict in the country, these challenges culminated in the military coup of September 12, 1980. Under the leadership of President General Kenan Evren and civilian Prime Minister Turgut Özal, Turkey adopted neoliberal economic policies, curbing the power of unions, reducing workers' purchasing power, and pursuing an export-oriented growth strategy. Political bans were imposed, pre-coup political parties were dissolved, and their leaders were imprisoned. Following the lifting of political bans in the 1987 referendum, general elections were held the same year. In 1989, Turgut Özal was elected president, ending the tradition of appointing presidents with military backgrounds since 1960.

3. Democratic Consolidation

Once democratic institutions are established in a country, the next step is to achieve the legitimacy of democracy and disseminate a democratic culture across all segments of society. According to Linz and Stepan's (1996, p. 5) formula, democracy is consolidated when political rivals accept it as the "only game in town" and regard it as the sole appropriate framework for pursuing their interests and governing society. This requires a consensus among the masses for the legitimacy of democracy. However, if successful collective actors oppose the legitimacy of democratic institutions and regularly violate constitutional norms, procedures, and laws, democratic consolidation is jeopardized (Diamond, 1999,

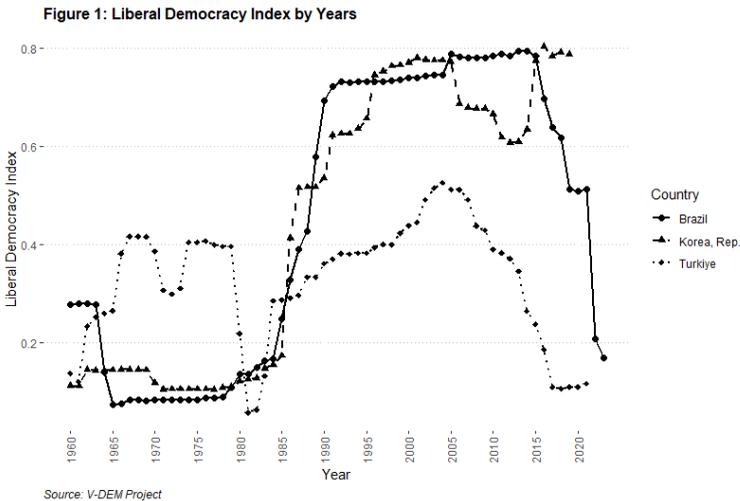
pp. 65–68). Naturally, every society has anti-democratic elements. As long as these actors remain on the political margins, the system is not threatened. However, if anti-democratic actors increase their societal support and occupy strategic positions within the system, the consolidation of democracy is undermined.

Schedler (1998, pp. 91–92) similarly supports this framework but offers a more detailed account of what democratic consolidation entails. According to Schedler, democratic consolidation includes not only societal legitimacy but also the dissemination of democratic values, the neutralization of anti-democratic actors, civilian control over the military, the elimination of authoritarian enclaves within the country, the facilitation of party formation, the organization of functional interests, the stabilization of electoral rules, the routinization of politics, the decentralization of state power, the establishment of direct democracy mechanisms, judicial reform, poverty reduction, and the achievement of economic stability.

Brazil, South Korea, and Turkey reached different levels of democracy through different paths over time. In the 1980s, they built/rebuilt their democratic institutions and embarked on the process of democratic consolidation. Figure 1 shows the liberal democracy scores from the V-Dem project. Each of these countries has experienced periods of democratic crisis. Particularly in the 2010s, all three saw democratic backsliding. While democracy collapsed in Brazil and Turkey, South Korea managed to navigate its democratic crisis relatively mildly.

Why have these three countries had different experiences with democracy? How did Brazil's and Turkey's democratic institutions erode while those in South Korea endured? Is Lipset's modernization theory, which identifies economic development as the cause and the level of democracy as the effect, sufficient to explain this divergence? In his seminal work, Lipset argued: "[...] the more well-to-do a nation, the greater the chance that it will sustain democracy. [...] A society divided between a large impoverished mass and a small favored elite would result either in oligarchy or in tyranny [...] the average wealth, degree of industrialization and urbanization, and the level of education is much higher for the more democratic countries" (Lipset, 1959, p. 75).

Thus, to understand the differences in democracy levels among countries, it is necessary to compare variables such as per capita income levels, income distribution, industrialization, urbanization, education, and economic growth. However, Przeworski (2000, pp. 89–90), criticizes Lipset’s modernization theory, argues that these conditions do not automatically lead to democratization. Instead, he posits that the level of development is crucial for the survival of democracy. In other words, a high level of development does not inherently produce democracy but ensures the continuation of an already existing democratic regime. Conversely, a decline in welfare levels can lead to the erosion of democracy.



Then, why does democracy erode? Lipset’s and Przeworski’s perspectives primarily address the demand side of democracy. To understand the erosion of democracy—manifested as the weakening of democratic institutions through authoritarian or populist actions—it is necessary to examine the supply side of democracy. The concept of a “power bloc” plays a critical role in this context. I borrow the term “power bloc” from Poulantzas, who defines it as the ruling coalition formed by dominant capital fractions. As Poulantzas (1975, pp. 296–297) explains: “[...] Thus political unity of the power bloc under the protection of the hegemonic class or fraction means unity of state power, in so far as it corresponds to the specific interests of this class or fraction.” In other words, in a

capitalist system, when a political party comes to power, the capital fractions it aligns with also ascend to power. Since these capital fractions have divergent economic interests, the economic policies pursued are shaped by the interests of the factions within the power bloc. In alignment with these interests, the government may seek to suppress labor, using law enforcement and the judiciary to achieve this goal. Alternatively, dominant capital fractions may utilize their control over the media to polarize society and obscure the distribution of surplus value. If the prevailing capitalist mode of production does not require the suppression of labor, the power bloc may decide to sustain liberal democracy.

Neoliberalism inherently carries authoritarian tendencies (Bruff, 2014, p. 116). It consistently seeks more flexible labor markets. However, different fractions of capital pursue varied agendas regarding labor. For instance, consider export-oriented sectors reliant on production of labor-intensive goods. To maintain competitiveness in global markets through price advantages, these sectors will demand that real wages remain as low as possible. On the other hand, capital-intensive and productivity-driven export sectors are less concerned about real wage levels. Instead, they will prioritize regulatory reforms that allow for easier dismissal of employees. Sectors that do not compete with imported goods, however, may advocate for higher domestic purchasing power. These dynamics indicate that the composition of the power bloc determines the mechanisms and degree to which labor is suppressed.

The ideology of the ruling party is another critical factor in determining the fate of democracy. A ruling party may aim to reduce income inequality, pursue industrial policies for national development, or seek to maximize social welfare. It may prioritize judicial independence and press freedom. However, the implementation of such policies depends on the concessions the government is willing to make to neoliberalism. If capitalists perceive these policies as harmful to their interests, they will take every possible measure to unseat the government.

In this section, I will examine the extent to which the three countries—Brazil, South Korea, and Turkey—were able to consolidate democracy after transitioning from authoritarian regimes and activating democratic institutions, adopting a historical perspective.

3.1. Rapid Democratization and a Disturbing Reverse U in Brazil

Following the military dictatorship from 1964 to 1985, Brazil peacefully transitioned to civilian governance. The 1988 Constitution established the legal framework for democracy, and democratic elections were held in 1989. Fernando Collor de Mello, who won the election, was impeached in 1992 on charges of corruption. In 1994, Fernando Henrique Cardoso was elected president and served two consecutive terms for a total of eight years. Cardoso implemented the neoliberal “Real Plan”, achieving fiscal stability through measures such as privatization. However, he could not counteract the capital flight caused by the global financial crises of the 1990s. As a solution, Brazil entered agreements with the IMF and adopted policies like inflation targeting, strict monetary and fiscal policies, and a floating exchange rate regime. While the Real Plan brought macroeconomic stability, it also restricted economic growth, increased unemployment, and led to a rise in external debt (Klein and Luna, 2023, pp. 252–254).

In 2002, Luiz Inácio Lula da Silva, leader of the Workers’ Party (PT), came to power, addressing these challenges during a period of favorable global economic conditions characterized by the “Great Moderation” in the United States. Lula pursued a growth regime based on domestic demand, implementing policies that increased the share of wages in national income (Saad-Filho and Boffo, 2021, p. 301).

During this period, Brazil’s democracy achieved high scores; it appeared consolidated even one year before Rousseff’s impeachment in 2016 (Bethell, 2018, p. 164). However, Dilma Rousseff, who succeeded Lula in 2011, faced adverse economic conditions. High interest rates and an overvalued currency throughout the 2000s had led to deindustrialization, a decline in skilled jobs, and a shift of economic activities from manufacturing to primary goods. When Rousseff attempted to ease monetary and fiscal policies, she lost the support of media and capital groups that had backed her party during the 2000s (Saad-Filho and Boffo, 2021, p. 302). Additionally, income distribution changes, which favored low-income and top-income groups at the expense of the middle class, caused Rousseff to lose middle-class support (Lima, p. 106). The withdrawal of support from finance capital, which advocated for a neoliberal agenda, signaled an impending change in power (Evans, 2020). Rousseff was impeached in 2016 amid corruption allegations.

Her successor, Michel Temer, accelerated neoliberal measures, including privatizations, and introduced constitutional limits on public expenditures, making strict monetary and fiscal policies mandatory even for future governments (Cannon, 2020, p. 52). Jair Bolsonaro, who assumed office in 2019, opposed legal measures aimed at reducing inequalities and intensified neoliberal policies. He continued privatizations, reduced the number of public sector employees, and rendered unions ineffective. As shown in Figure 1, this period saw a dramatic democratic backsliding, forming a reverse U-shaped trajectory. Bolsonaro's neoliberal agenda was interrupted in 2023 with Lula's return to the presidency.

3.2. The Period of Democratic Consolidation in South Korea

In the summer of 1987, Chun Doo-hwan, South Korea's authoritarian military leader, declared that Roh Tae-woo would be his successor. This announcement triggered nationwide protests, with demands for an end to authoritarian rule, the introduction of direct presidential elections, and regional decentralization (Mosler et al., 2018, p. 2). Although the government considered deploying armed forces against the protesters, reluctance within the military and pressure from the United States prevented such actions (Im, 2020, p. 86). Consequently, the constitution was amended, and by the end of the year, the first elections were held, with Roh Tae-woo becoming the first president of the new democratic regime.

The first significant test for the democratic regime came with over 3,000 strikes across the country. Workers demanded higher wages, improved working conditions, and advancements in labor rights. These demands resulted in substantial wage increases without causing an economic slowdown. Businesses continued to invest, and during the transition period from 1987 to 2007—excluding the contraction in 1999—the average growth rate was 6.28% (Im, 2020, p. 257).

However, this period also saw certain challenges. According to Suh and Kwon (2014, pp. 686–687), although chaebols (large family-owned conglomerates) continued to expand, they failed to create new employment opportunities. This was due to their increasing focus on technology and knowledge-intensive industries and the relocation of production bases to China and Southeast Asia.

Another development related to the chaebols was their growing share of GDP, accompanied by an increase in their political influence. Additionally, there was a rise in low-wage, temporary jobs during this period.

In the subsequent period, from 2008 to 2016, conservative governments led to democratic backsliding through authoritarian actions (Han and Shim, 2023, p. 141). The administration of Lee Myung-bak (2008–2012) is notable for its neoliberal policies (Suh and Kwon, 2014). During this time, tax rates for high-income earners were reduced, and the political power of chaebols further intensified. Interest rates were lowered, and the local currency depreciated. Lee aimed to achieve high economic growth rates, but this growth came at the expense of equality (Suh and Kwon, 2014, p. 687). A similar governance approach was adopted by the subsequent president, Park Geun-hye (2013–2017). However, both Lee and Park faced corruption allegations, particularly related to their ties with chaebols (Kim and Kim, 2021, p. 113). The candlelight protests that began in 2016 and lasted for over a year ultimately led to the resignation of President Park Geun-hye, restoring the constitutional republic based on popular sovereignty.

3.3. A Near-Miss Consolidation in Turkey: From Democracy to Authoritarianism

In 1987, Turkey experienced two significant developments in its democratic trajectory. First, the political bans imposed after the 1980 military coup were lifted through a referendum, allowing banned leaders to reenter politics and ushering in a renewed period of competitive elections. Second, Turkey formally applied for membership in the European Union (EU). The goal of EU membership was widely embraced, including by the military, which saw compliance with the EU's democratic criteria as a means to mitigate its dominant role in politics. Unlike in the past, the military refrained from intervening in instances of political instability, focusing instead on preserving secularism and exerting pressure on governments to this end. A prominent example is the February 28, 1997 intervention, in which the military compelled the conservative Erbakan government to adopt extensive measures against perceived Islamist activities. Similarly, in April 2007, the military issued an official memorandum warning the AKP government on matters of secularism.

From 2008 onwards, legal cases such as “Ergenekon” and “Balyoz” resulted in the arrest of leading military officers, followed by constitutional amendments that abolished the National Security Council. Consequently, the military’s visible influence in politics significantly diminished after this period.

In terms of class relations, the neoliberal transformation that gained momentum in the 1980s encountered resistance from the working class in 1989. Workers, seeking to recover real wage losses incurred during the 1980s, successfully obstructed privatization efforts (Doğan, 2010, p. 16). Following economic crises in the 1990s and particularly in 2001, the Justice and Development Party (AKP) government led by Recep Tayyip Erdoğan came to power. Benefiting from the expansionary policies of the U.S., the AKP achieved high growth rates. Neoliberal policies were reinstated, significant privatizations were carried out, and fiscal discipline programs under the IMF were implemented. High interest rates and a low exchange rate regime helped reduce inflation. Income distribution also improved, though at the cost of early deindustrialization and high unemployment (Taymaz & Voyvoda, 2012, pp. 97–98). Additionally, new labor regulations legalized flexible employment practices, such as part-time and temporary work arrangements (Orhangazi, 2019, p. 345).

During this period, the dominant faction within the power bloc comprised large capital groups (Güngen & Akçay, 2024). Erdoğan maintained social stability until the 2010s through a system of charitable assistance via foundations and by awarding government contracts to business figures allied with the ruling party (Gürakar & Bircan, 2018). Many firms, particularly in the construction sector, received substantial public tenders, and some of their owners also controlled media outlets that openly supported the AKP government.

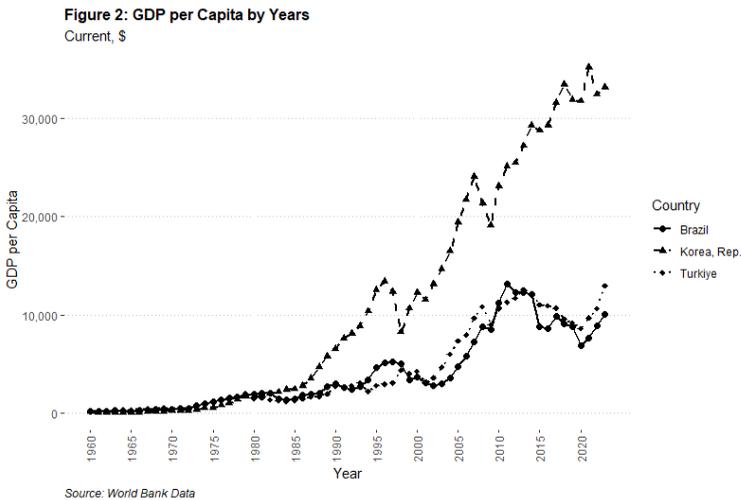
However, after the end of military guardianship and the stagnation of EU accession negotiations, democratic institutions began to erode. Throughout the 2010s, the executive’s powers expanded while judicial independence waned (Esen, 2024). Police crackdowns during the 2013 Gezi Park protests persisted in subsequent years, leading to a significant decline in street demonstrations. Following the 2016 coup attempt, a state of emergency was declared, lasting nearly two years. During the emergency, a 2017 referendum introduced a “presidential system,” enhancing the president’s powers while diminishing parliamentary authority and undermining the judiciary. The autonomy of public

institutions, including the Central Bank and the Turkish Statistical Institute, was also curtailed (Arslantaş & Kaiser, 2022). Opposition voices faced repression, and some Constitutional Court rulings were disregarded.

After the presidential system was adopted and Erdoğan became its first leader, he shifted the long-standing growth model toward low-interest rates and export-driven growth, aiming to increase employment in labor-intensive export sectors. However, this approach resulted in currency depreciation and high inflation. Following the 2024 elections, Erdoğan reversed this policy, allowing interest rates to rise to curb inflation and stabilize the exchange rate.

3.4. The Demand Side of Democracy: The Impact of Economic Development on Democratization

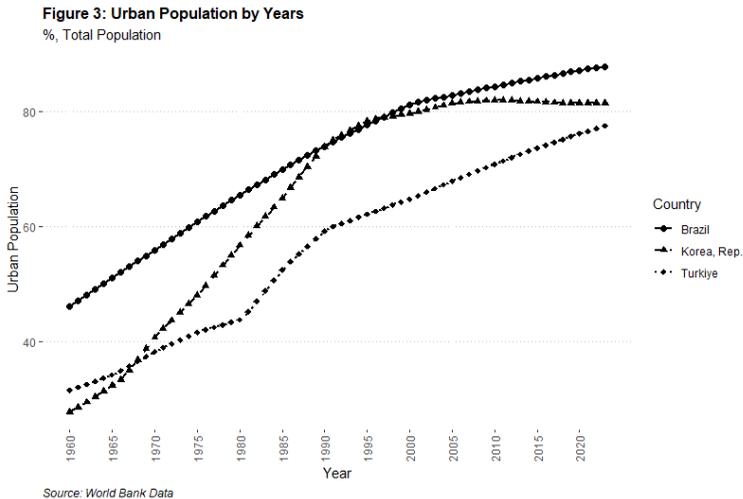
The most significant obstacle to authoritarian tendencies within the power bloc is the demand for democracy. If there is a strong demand for democracy within society, the extent of authoritarianism cannot surpass certain limits. Among the three countries analyzed, this tendency appears to be stronger in South Korea. To understand the reasons for this, we can examine Figure 2, which illustrates per capita income levels—considered by Lipset as a primary indicator of wealth.



Until the early 1980s, the per capita income levels of the three countries were relatively similar. However, South Korea began to outpace the others after 1982. From this point onward, while Brazil and Turkey maintained similar per capita income levels, South Korea's income levels grew to approximately three times those of Brazil and Turkey by the 2020s.

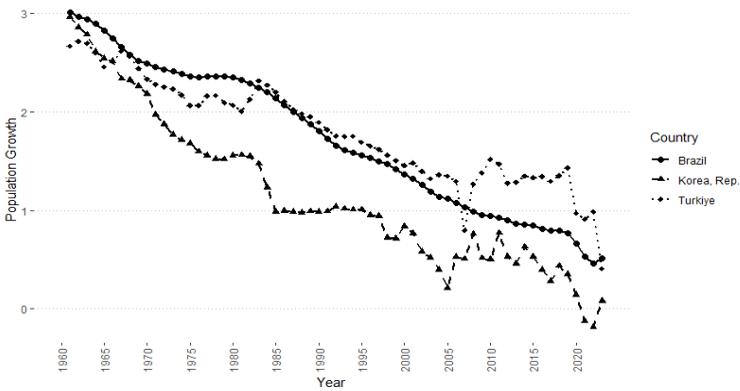
As Lipset argues, per capita income is not the sole determinant. Other factors, such as urbanization, industrialization, and the quality of education, are also crucial in shaping the demand for democracy. These elements contribute to a society's capacity to resist authoritarianism and sustain democratic institutions.

When we examine urbanization rates in Figure 3, Lipset's arguments do not hold in this context. Brazil began urbanizing earlier than the other two countries and, by the 2020s, has a higher urbanization rate than both South Korea and Turkey. However, developing countries often face the issue of "pseudo-urbanization." This phenomenon occurs when rapid rural-to-urban migration is driven by industrialization, but the urban economy cannot absorb the excess labor force. As a result, many migrants fail to find employment in industry, settling instead on the outskirts of cities and engaging in informal work.



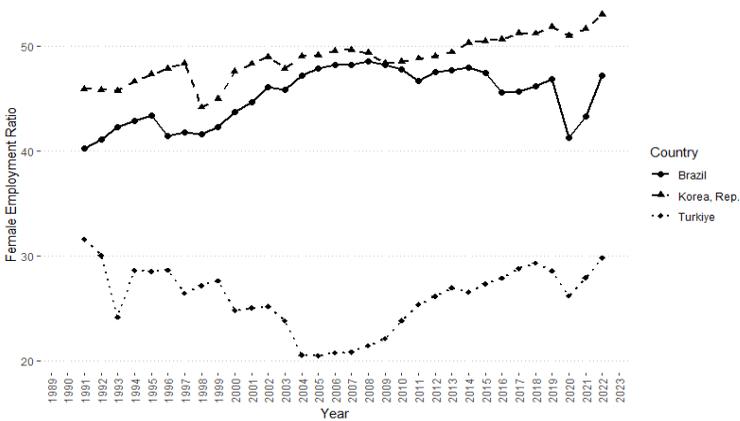
In such cases, migrants do not fully sever their ties to rural areas and cannot be considered fully urbanized. To better understand the extent to which countries have genuinely urbanized, two additional indicators can be useful: population growth rates and female labor force participation rates. These indicators provide insight into whether urbanization is accompanied by meaningful structural changes in society and the economy.

Figure 4: Population Growth
 Annual %



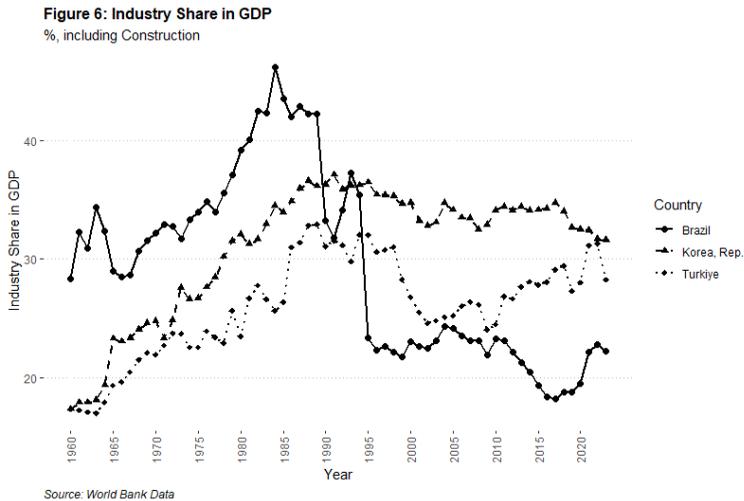
Source: World Bank Data

Figure 5: Female Employment Ratio



Source: ILO

Another critical factor in understanding urbanization and democratization is the predominant economic activities within a country. Lipset identified industrialization as a key factor in democratization during his time. Figure 6 highlights the share of industry in GDP across the three countries.



Until the mid-1990s, Brazil had a higher share of industry compared to the other two countries. However, from the late 1990s onward, Brazil’s industrial sector experienced a significant decline, falling below both Turkey and South Korea. In Turkey, a notable decrease in the share of industry began in the early 2000s. One major reason for this decline was the implementation of a high interest rate and low exchange rate policy, which, combined with globalization, made investment prohibitively expensive, particularly for small producers. However, from the 2010s onward, Turkey adopted a new growth regime, leading to a gradual recovery in the industrial share of GDP.

In South Korea, the industrial sector experienced steady growth until the 1990s. From that point onward, it exhibited a plateau followed by a slight decline in later years. Despite this trend, South Korea maintained a relatively stable industrial base, which contributed to its sustained economic growth and development. This stability underscores the role of industrialization as a

foundation for economic and social transformations that support democratization.

Ultimately, South Korea's share of industry in GDP is higher than that of Brazil and Turkey. However, this does not tell the whole story. While the industrial shares of Turkey and South Korea are relatively close, there is a significant difference in their democracy scores. Therefore, it is also important to examine the quality of industrialization.

Figure 7 illustrates the share of goods and services exports in GDP for the three countries. Unlike Brazil and Turkey, South Korea pursued an export-oriented industrialization model. Turkey adopted a similar model in the 1980s, leading to a continuous increase in its export share thereafter. Meanwhile, Brazil's export share remained around 10% for many years but gradually approached 20% by the 2020s.

South Korea's long-standing commitment to export-oriented industrialization fostered integration into global markets, technological advancements, and productivity improvements. These factors contributed to stable economic growth and structural transformation, creating a stronger foundation for democratic consolidation. In contrast, Brazil's and Turkey's later and less intensive adoption of export-oriented models limited their ability to replicate South Korea's success in aligning industrialization with democratization.

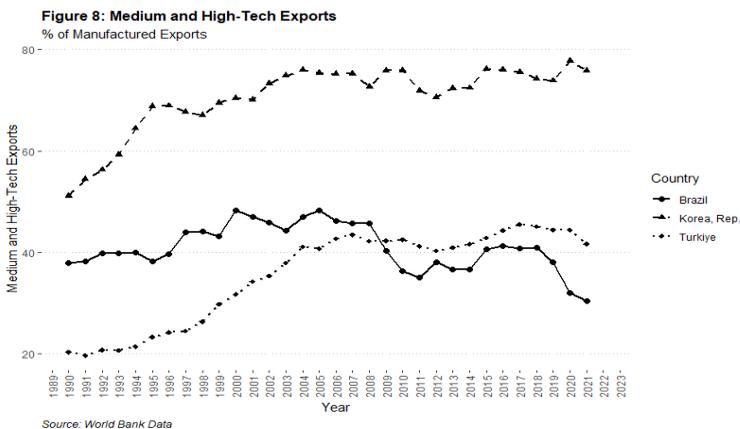


Figure 8 provides a more critical indicator of the quality of industrialization, showing the share of medium- and high-technology products in the manufacturing exports of each country. Due to data limitations, the analysis begins in 1990, coinciding with the early years of democratic consolidation.

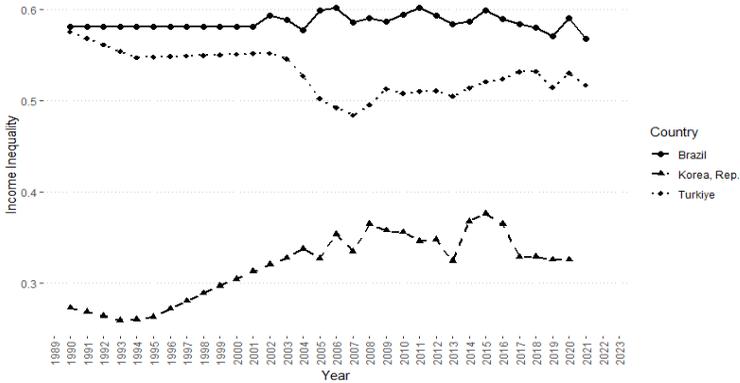
At the start, Turkey's share of medium- and high-technology exports was around 20%, the lowest among the three countries. This share steadily increased throughout the 1990s, stabilizing around 40% by the 2010s. However, a slight decline occurred in the 2020s. One reason for this downturn is the government's shift in its growth strategy, favoring labor-intensive small exporters competing on price over capital-intensive large firms focused on quality-competitive production. Brazil, which initially occupied a middle ground between South Korea and Turkey, experienced a decline in its share of medium- and high-technology exports in the 2010s. This can be attributed to the previously discussed "primarization" of Brazil's exports, with a shift toward primary commodities. South Korea, in contrast, not only maintained a higher share of exports relative to its GDP (Figure 7) but also exhibited a composition of exports dominated by higher value-added products. Such a production structure requires a more advanced level of human capital, which contributes to South Korea's stronger democratic institutions. Figure 8 has greater explanatory power in understanding democracy scores, as declines in democracy scores during the 2010s align with decreases in the share of medium- and high-technology exports. This relationship underscores the importance of the nature of industrialization in shaping both economic and political outcomes, with South Korea's high-technology industrial base supporting its relatively robust democratic consolidation.

Lipset's assertion that democracy cannot flourish in a society where a small elite dominates a large impoverished population can be interpreted as a reference to income and wealth inequality. Figures 9 and 10 illustrate income inequality and wealth inequality, respectively, across the three countries. South Korea consistently demonstrates a more favorable performance in both income and wealth inequality compared to Brazil and Turkey. Brazil, not only among these three countries but globally, remains one of the most unequal countries. While the 2000s saw some fluctuations in inequality, a decline in income inequality has been observed since the mid-2010s, driven primarily by improvements in the conditions of the poor. However, this period also witnessed a significant increase

in wealth inequality. When considered together, these trends indicate an era in which both the poor and the wealthy experienced improvements, while the middle class saw a deterioration in their economic standing. As discussed earlier, one of the reasons for the middle class's support for Bolsonaro in 2016 stems from this dynamic.

Figure 9: Income Inequality

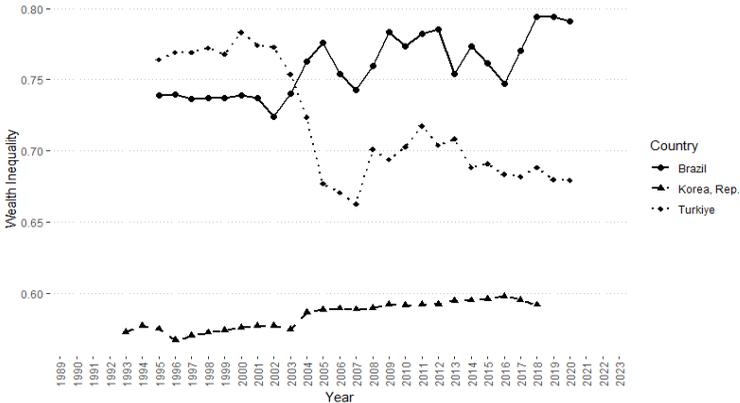
Share of the Top %10 to the Bottom %90 Ratio



Source: World Inequality Database

Figure 10: Wealth Inequality

Share of the Top %10 to the Bottom %90 Ratio



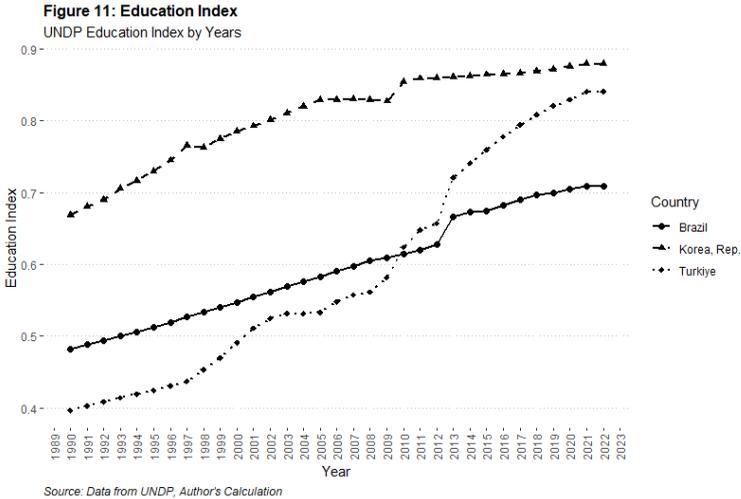
Source: World Inequality Database

In Turkey, income inequality, though high, decreased approaching the 2010s before rising again. Similarly, wealth inequality initially decreased but surged rapidly in the mid-2010s. While a decline is noted toward the 2020s, it remains higher than in 2007. During this period, the share of wages in GDP declined while the share of profits increased (Orhangazi, 2019). South Korea stands out as one of the countries with the lowest levels of income inequality globally. However, since the 1990s, both income and wealth inequality have shown an upward trend. Both measures peaked in the mid-2010s, coinciding with a decline in democracy scores. This alignment underscores the interplay between economic disparities and democratic outcomes, highlighting how shifts in inequality can have profound implications for political stability and democratic consolidation.

Figure 11 presents the Education Index, as defined by the United Nations Development Programme (UNDP): “The Education Index is measured by combining average years of schooling for adults with expected years of schooling for children, each receiving 50% weighting”(UNDP, 2024). In 1990, South Korea’s Education Index score was significantly higher than those of Brazil and Turkey. Although Brazil’s score has risen over time, the gap with South Korea has remained consistent. In Turkey, the Education Index has also shown an upward trend, narrowing the gap with South Korea by the 2020s.

However, it is important to note that older generations in South Korea were better educated compared to their counterparts in Brazil and Turkey. This historical advantage in educational attainment has likely contributed to South Korea’s relatively stronger democratic institutions and consolidation, as education plays a crucial role in fostering civic awareness, participation, and support for democratic values.

The duration of schooling provides partial insight into a society’s overall education level, while cognitive scores are essential for assessing the quality of education. In this regard, the OECD’s Programme for International Student Assessment (PISA) scores offer valuable insights, measuring the performance of 15-year-old students in mathematics, reading, and science.



In 2022, the PISA mathematics scores were as follows: South Korea scored 527, significantly above the OECD average of 472, while Turkey scored 453 and Brazil scored 379, both below the average. In reading, South Korea achieved 515, again above the OECD average of 476, while Turkey scored 456 and Brazil scored 410. For science, South Korea scored 528, outperforming the OECD average of 485, with Turkey scoring 476 and Brazil 403. These patterns, with South Korea consistently exceeding the OECD average and Brazil and Turkey falling below it, have persisted across previous years as well.

Thus, South Korea has maintained a superior position in both educational attainment and cognitive scores since the periods of democratic consolidation. This advantage likely contributes to the country's ability to foster civic engagement, political awareness, and support for democratic norms.

Figure 12 illustrates unionization rates across the three countries. Although Lipset's modernization framework does not explicitly address unionization, it can be considered an outcome of industrialization. In South Korea, unionization rates have remained relatively stable over time. In Brazil, these rates were steady until the 2010s, after which a negative trend emerged, particularly following the global financial crisis. The decline became more pronounced during Bolsonaro's presidency.



In Turkey, unionization rates have been significantly lower than in the other two countries, particularly since 2013. However, as noted earlier, these rates were higher in the early 2000s, before widespread privatizations took place. According to the International Labour Organization (ILO), unionization in Turkey rose from 14% in 1987 to 33.7% in 1995 (Çelik and Lordoğlu, 2006, p. 14). Early deindustrialization may have had an adverse impact on unionization rates. The slight increase in unionization during the 2010s appears to align with the resurgence of industrialization during this period.

These trends highlight the intricate relationship between industrialization and unionization. While unionization serves as a reflection of industrial labor's organizational capacity, its decline—whether due to deindustrialization or neoliberal policies—often coincides with weakened bargaining power for workers and diminished mechanisms for resisting authoritarian or populist pressures. This interplay further underscores the role of industrialization and labor dynamics in shaping democratic resilience.

4. Conclusion

Does Lipset's theory—that democracy is a result of development—hold true based on this study? It is difficult to definitively say yes. South Korea has higher per capita income, a more advanced industrial sector, higher urbanization rates, more equitable income and wealth distribution, and better education levels compared to Brazil and Turkey. Consequently, it maintains a higher liberal democracy score. However, the economic difficulties experienced in South Korea during the 2010s led to democratic backsliding. While this decline was brief, and the country eventually returned to its previous democratic standards, Brazil and Turkey witnessed prolonged stagnation throughout the 2010s, culminating in the collapse of democracy. Thus, it is reasonable to conclude that there is a connection between economic performance and the level of democracy.

In this study, democracy has been analyzed as a matter of supply and demand. Citizens of a country continue to "buy" democracy if they see improvements in their living standards. Otherwise, despite meeting Lipset's conditions, a country can shift toward populist and/or authoritarian regimes due to societal discontent. Neoliberalism, in particular, has shown a readiness to exploit such discontent for its benefit. In Brazil, finance capital leveraged the middle class's frustrations to facilitate the rise of Bolsonaro, who pursued a neoliberal agenda. In South Korea, chaebols developed close ties with conservative governments that came to power after 2008. In Turkey, when the AKP strayed reluctantly from neoliberal policies, the resulting economic problems and welfare losses pushed the party back toward stricter adherence to neoliberalism.

Once a country diverges from democracy, can it return to its previous level? Just as countries follow long-term economic growth trajectories, they also exhibit political regime paths. In South Korea, crises related to the regime have been reversible, as evidenced by the societal demand seen in the candlelight protests. Similarly, after Bolsonaro's presidency, Brazil elected Lula through democratic elections, signaling a return to its democratic trajectory.

In Turkey, however, a large majority brought Erdoğan back to power. Erdoğan understands that voters base their political preferences on material benefits, such as employment, real wage increases, and redistribution mechanisms. Employment-boosting policies implemented before the general elections secured his victory. However, subsequent welfare losses led voters to shift their support

to opposition parties in local elections. The ruling party now understands that it faces an electorate ready to "buy" democracy only if societal welfare improves.

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8

“TRUTH IS NOT KILLED BY KILLING JOURNALIST” THE VIOLENT NATURE OF JOURNALISTIC WORK IN MÉXICO

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Abstract

This essay aims to denounce the violent nature of journalistic work in the state of Zacatecas, Mexico. Journalists, like most of the workers in the capitalist system, must face the condition of exploitation and extermination whose goal is the accumulation of capital. However, their condition of being a vigilant institution in the system dependent on the state policy condemns them to expressions of violence that we intend to explain in this paper. Studies around the world have recorded a sustained trend of aggressions against journalists in recent years, especially in Mexico, which has become the most dangerous place to practice journalism. Violence against journalists is not only translated into homicides, but also exists in various ways, as we will explain in the case of journalists in the city of Zacatecas. This condition of being vigilant but also dependent on their aggressor condemns them to a vulnerability that generates a condition of silence or extermination of journalism.

Keywords: violent nature of work, journalism, state policy, capitalism.

Jel Codes: P1, O19, J81, J88.

1. Introduction

The problematic of journalism is complex, full of paradoxes such as the fact that it is an institution socially defined as a watchdog agency of power, but in practice it is just another company of the system, which is subjected to the needs of those it oversees because they are its main client (Chomsky & Herman, 1990; Bourdieu, 1996; Harvey, 2005). Generating media content that benefits a sector of global society, transforming the State policy and Journalism into forces that add to the reproduction of the social system and not for the benefit of the majorities of society (McChesney, 1999). Therefore, vigilant journalism with a power of agency (referring to offering a capacity for social transformation), "is constituted as a dangerous practice to the extent that it threatens the de facto established order, being the object of persecution and violence" (Hincapié & López, 2018). This paper aims to denounce the violent nature of journalistic work in the city of Zacatecas, Mexico with its specific economic and political conditions. Journalists in the capitalist system must face the condition of exploitation and extermination (violent character) for the goal of capital accumulation. However, their condition of being a vigilant institution in the system dependent on the State policy, condemns them to violence that we intend to clarify in this paper.

We will begin this work with our theoretical conception of the violent nature of work as a determinant of the condition of vulnerability of the human being. Then we will review the international conditions of journalistic work, to understand the case of journalism in Mexico, whose conditions are the most dangerous areas in which to practice the journalistic profession. As a last analysis we make a record of the aggressions to the press in the city of Zacatecas. This document aims to reflect on an essential question: why does violence against journalism occur in Mexico? In particular, to reveal and understand the violent nature of journalistic work in Zacatecas, Mexico.

Violence in journalism is diverse and complex, it does not only refer to the recording of homicides, but the silence of the press is also a form of murder and there are areas that, due to their geographic and political characteristics, determine conditions for greater manipulation and intervention of the state policy on the press (Salazar Rebolledo, 2022). Such is the case of the city of Zacatecas in Mexico.

2. The Violent Nature of Labor in the Capitalist System

This work assumes a critical stance on violence in the current context of a capitalist system. Looking for a possible starting point for this analysis we take up the discussion of Frederic Engels who makes a historical description of it in his book *The Role of Labor in the Transformation of the Ape into Man* (1876). Engels affirms that labor was determinant in the evolutionary biological transformation of man, also marked the way in which he relates to nature and transforms it. Also catalogs the work as a determinant form of the conditions of life.

In historic stages of labor, we observe how the division of labor began with a simple classification defined by sex and age, to evolve into an expanded division that contemplates bureaucracy, forms of justice, war and wage forms that, with the transformation of capitalism, it has taken more informal and precarious forms, such as piecework, low wages or employment on digital platforms (Foladori & Melazzi, 2019). It should also be noted that the development of tools for human labor has stagnated and is currently focused on two sectors: the industrialization of production and communication, the construction of roads to reach consumers, even though climatic or social crises require other efforts, capital dictates technological development. The sustainability of the mercantile production stage is due to its cyclical character, its capacity to adapt, transform and take advantage of crises. However, any crisis can generate wealth for some who manage to appropriate the means of production of the most vulnerable capitalists, the tendency is to generate monopolies so that capital continues to accumulate in less hands (Foladori & Melazzi, 2019).

The stages of work also make it possible to understand some of the conditions that dictate the forms of social relationships (Reinznik, 2007):

1. *It is the character of conscious work.* The capacity to acquire knowledge, abstract it and share it through language to evolve, building tools and exploiting the resources- skills available to the human being. It is through this characteristic of human work that ideologies are generated for the organization of civilizations.
2. *The creative character.* Related to the capacity to metabolize with nature, transform it and adapt it to the needs. Man's creativity allows him to devise solutions and break with the established.

3. *The necessary character*, that seeks a vital cycle to perpetuate the interests of humanity.
4. *The violent character* has its origins in the stage of slavery where forced labor begins. From this perspective, work is attributed to qualities such as mortification, suffering or torture.

Marx (1867) describes how the accumulation of capital is achieved through exploitation and dispossession. Therefore, the violent character in the stage of work we live in is sharpened and is determinant in the way of life, for all workers. However, there are professions¹, such as journalism, which due to its agency factor² generate greater risk and vulnerability.

3. Working Conditions in Journalism Around the World

The Committee to Protect Journalists (CPJ) in its latest report on *Attacks on the Press in 2023* maintains that attacks on the life and freedom of journalists remain at historic levels, with the highest number of murders since 2015; states that at least 8 out of 10 killers of journalists go free, so there is a high rate of impunity. The report documents 99 journalists murdered around the world, and 320 imprisoned awaiting legal trials. 75 percent of the journalists murdered this year took place in Israel, after the conflict with Palestine began. Compared to 2022, worldwide attacks on journalists increased 44 percent, according to this report, and most of them were recorded in the last three months of the year, driven by the war in Gaza. Of the 99 killed, at least 78 cases were able to prove that their murder was directly *linked* to their work. The countries with the highest number of deaths are Israel and the occupied Palestinian territory, Lebanon, Cameroon, Philippines, Mexico and Ukraine.

Even though most of the murders of journalists occurred in war zones, the report highlights that conditions for journalism have not improved in other parts of the

¹ It is important to point out other professions whose tendency to be violated is in force and which pursue this same line of analysis and would be valuable to study in future studies on labor; some of those who suffer more persecution are politicians, teachers, religious representatives, academics and defenders of social and environmental causes.

² We conceptualize the agency factor from the concept of the agent of change conceived by Marx as a force for the social transformation of reality.

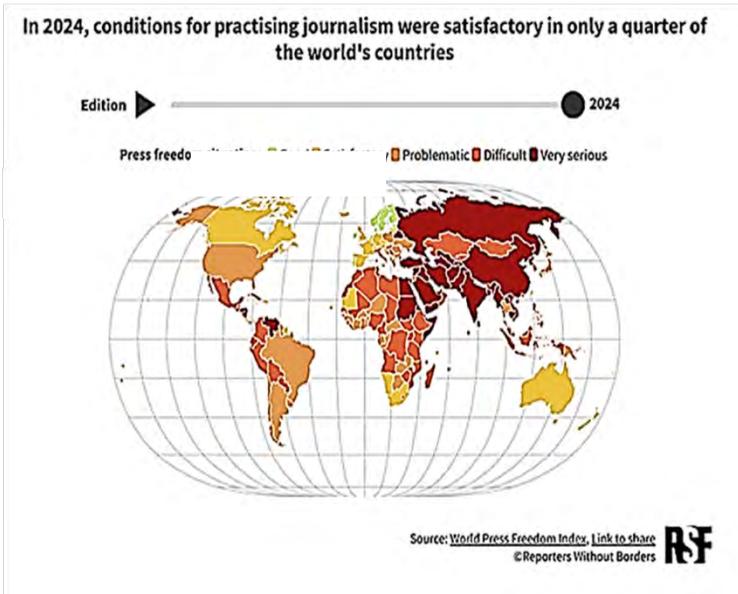
world, as the number of imprisoned journalists remains at historic highs. 65 percent of the imprisoned journalists face charges against the State, such as misdemeanor news and terrorism, linked to retaliation for their journalistic work. The countries that imprison the most journalists per year are China, Myanmar, Belarus, Russia and Vietnam. Reporters Without Borders (RSF, 2024b) has a barometer that measures abuses in real time, recording that from January 1 to the last day of September 2024, 42 journalists have been murdered and 556 detained around the world.

The report considers five types of abuses: murder, detention, kidnapping and disappearance. The four countries with the highest number of homicides so far this year are Palestine with 12 murders, followed by Pakistan 6, Bangladesh 5 and Mexico 4. It should be noted that the first two are in declared armed conflicts, while Bangladesh is experiencing anti-government civil unrest. The case of Mexico is therefore representative since it does not have an officially accepted armed or political conflict.

In the case of *arrests* the four countries with the highest number of arrests is China with 113 cases, followed by Myanmar with 73, Belarus with 50 and Israel with 40. The record of arrests has been kept since 2018, which allows stating that, in the last seven years, arrests of journalists sustain an increasing trend of more than 400 percent. Regarding the 58 kidnappings recorded in 2024, only 7 countries recorded 40 in Syria, Iraq 9, Yemen 4 Mali 2 and Mexico, Nigeria, Sudan one case each. Finally, there is a record of 111 disappearances of journalists related to their work. Mexico tops the list with 31 cases, the other three countries with the highest number of kidnappings of journalists in the world are Syria, Sri Lanka and Iran.

The agency also issues a report on the World Press Freedom Index (2024) where it reports a drop in the global average of 7.6 points, which translates into a lower press freedom index in the world. Below is the map that results from the registration of these indexes and shows that most of the countries are in a serious situation. Only three countries comply with the classification: Denmark, Ireland and Sweden.

Figure 1. Graph of the conditions for practicing journalism



The report takes five indicators: political, economic, legislative, sociocultural and security. While four of its indicators are maintained, there is a negative movement in the political sphere, where the very agents in charge of guaranteeing freedom, such as public officials, are the same ones who threaten it, which leads to the conclusion that governments are not interested in press freedom. This same conclusion is reached by the Inter American Press Association (IAPA) when it points out politicians as the main enemies of freedom of expression, in *the Conclusions of the IAPA half-year virtual meeting, from April 17 to April 19, 2024*. In addition, they conclude that within the continent two main aggressors of journalists are identified: state actors and organized crime. The press does not have the capacity to cover issues related to organized crime. IAPA identifies that politicians seek direct communication with citizens and confrontation with the media, which leads to a weakening of the institution. Three countries are identified where presidents refer negatively to journalists: Colombia, Argentina and Mexico.

In its 2024 annual report, Reporters Without Borders stresses that most of the reporters killed were doing their work in areas of armed conflict with credentials

subject to international conventions, which are supposed to keep them safe. Gaza became the most dangerous area for journalistic coverage, and they warn that journalism is threatened with extinction, as in addition to the killings, foreign journalists have been banned from covering it. But this year will go down in history as the beginning of conflicts that are not considered war and that pose a threat to journalistic coverage, such as those in Sudan, Bangladesh, Burma and Mexico. The report highlights that journalists are being killed and there is no justice, and that this year the leading killer of journalists internationally is the Israeli military (RSF, 2024d).

Although there has been a decrease in homicides, other forms of aggression against the press, such as control of social networks and the Internet, are of concern, as well as new forms of aggression in the region such as espionage, virtual harassment, lawsuits, imprisonment, exile or deportation. The report also identifies legislative projects that condemn or restrict the practice of journalism in Bolivia, Brazil, United States, Canada, El Salvador, Nicaragua, Paraguay and Venezuela. These judicial trends are prejudicial to freedom of expression, hold journalists responsible for defamation or slandering the people they interview, criminalize public or online expressions, increase penalties or eliminate forms of access to information. On the other hand, countries such as Chile, which passed a law to protect journalists in journalistic coverage. Panama, which obtained a law to regulate official advertising and judicial harassment, and Puerto Rico, which obtained a ruling to endorse the confidentiality of information sources. IAPA (2024) identifies as challenges in the area alliances with artificial intelligence developers, legislative regulations regarding copyright and payment of compensation to content authors.

The UNESCO Directorate General Report (2022) on the Safety of Journalists and the Danger of Impunity revealed a significant increase in the number of women journalists killed, and the increase in the number of journalists killed while covering protests, most of which occur outside their workspaces. The trend since 2016 is that journalists are less safe in countries that are not at war, as is the case of Mexico.

The reports of these agencies allow us to identify an international trend of increasing aggressions against journalists and freedom of expression. However, the case of Mexico stands out as a country with no declared war, but with high

rates of homicides of journalists, kidnappings and confrontation with his president and government.

4. The Conditions of Journalistic Work in Mexico

The media landscape in the country is dominated by *Teléfonos de México* (TELMEX), a Mexican telecommunications and IT services company owned by the entrepreneur Carlos Slim; radio broadcasting by *Grupo Televisa*³ owned by the executive Emilio Azcárraga Vidaurreta, and the press is led by *Organización Editorial Mexicana* (OEM), which controls 37 newspapers distributed throughout the country, 24 radio stations and 44 major websites. However, with the democratization of digital media, there are more and more journalists who independently seek to publish their work through social networks, mainly Mark Zuckerberg's *Meta* and Elon Musk's X (formerly Twitter). For some specialists "the media ownership system in Mexico stands out for being one of the most concentrated and privatized in the world" (Márquez, 2012: 4) which leaves both profits and influence in few hands and close to political agents in the country.

Photo 1. Free Photojournalist working at public event with police forces attending.



Photo by Gary Robledo. With permission to use

The media became so influential that Márquez (2012) calls "teledemocracy", was built to refer to the strategy of forming political figures through the small screen. Villamil (2005) in his book *La televisión que nos gobierna*, describes the model and

³ All these companies are distinguished by the distinction of being Public Stock Corporations (S.A.B.) with variable capital (C.V.).

structure of Mexican television that became the "*de facto power*" that influenced economic, political and social decisions in the country.

Mexican president Andrés Manuel López Obrador (2018-2024) started the denominated "war against this *de facto power*" by dismantling television as the channel with the greatest influence in Mexican society, he managed to generate a direct channel of communication with his public and electors. Through media space at the national government headquarters, equipped with everything necessary for high quality production. In this television program, he held daily meetings with journalists and special guests. During six- year of government he broadcasted 1,430 communication programs, whose duration ranged from an hour and a half to three and a half hours (Arista, September 28, 2024). The space that assumed a dynamic of traditional press conferences; however, the president was the one who dictated the agenda of questions, there were raffles, suggestions (literary, musical, public figures to follow or not to follow, among others) presentation of his stuffed figure and even programmed traditional sections such as the *Who's Who in this week's fake news*. The president became the axis of social communication; however, this did not result in improvements for access to public information, according to the report of the organization Artículo 19 (*Unofficial information and social communication* (2023) between 2019 and 2022, 84 requests for public information and 22 appeals for review were filed regarding 34 statements of the president, of which the following results stand out:

- Only 5.6 percent were supported by public information.
- 2.9 percent presented verifiable information, but it was out of context.
- 5.9 percent used information in a misleading manner.
- 58 percent of the cases could not be verified as either true or false.
- 26 percent of the information submitted was found to be false.

One of the president's politic campaign promises was the regulation of official advertising, considering it the mechanism to influence the editorial line of the media. Advertising spending was reduced, but the judicial reforms did not arrive and in the absence of a legal mechanism, distribution continues to be discretionary. In Mexico there are two types of journalism: those that benefit from the economic-political power and those that are exterminated either by punishing them with the distribution of the economic resource of official advertising or literally assassinating them.

The agency Artículo 19 analyzed the official advertising expenditure during 2023, where it revealed the existence of patterns of under-expenditure of more than 14 percent, concentrating the expenditure on this item in the month of December; while the whole year the expenditure was below 250 million pesos, in the month of December it shot up to a figure close to 2 billion pesos. A total of 424 media outlets received official advertising, but only 10 received 45 percent of the total resources, of which only three received more than half of the resources, the first beneficiaries being the newspaper "La Jornada", *Grupo Televisa* and *Medios Masivos Mexicanos* (a group of newspapers).

On the other hand, Mexico is the most dangerous country in the world to practice journalism; it is also the country with the highest number of kidnappings, disappearances and murders (in places with no declared war) of journalists (RSF, 2024a). The journalists who are victims of these crimes share specific characteristics such as the territory where they work, they are journalists who cover local information, most of them are independent journalists or their media does not have coverage outside the state, the governor is an authoritarian figure; Del Palacio (2015) identifies them as "*border journalism*" and defines them as "those journalists who work in the physical, political, economic, cultural and technological margins of a territory" (Del Palacio, 2023:11). These characteristics increase the risk of suffering some aggravation to their person, belongings or families. Regarding the territorial margins, the Mexican state of Veracruz is the one that records the highest number of homicides of journalists, also the border area with the United States (Del Palacio, 2015). Although there are mechanisms in place to protect journalists, these seem to be outdated since 650 professionals are currently protected by this resource. It is worth mentioning the experience of a well-known journalist named Noguez, who was shot inside an official security vehicle that was supposed to have protection and escorts while he was investigating.

The Permanent Peoples' Tribunal in the session on the Murder of Journalists (November 2021 - September 2022), declared that the press in Mexico is one of the main victims of its corrupt and unpunished political structure, which is the cause of the context of generalized violence by armies fighting for territorial control. In their registry, they report that from the year 2000 to 2022, 156 journalists have been murdered, 48 during the administration of Mexican President Felipe Calderón, 47 during the administration of President Enrique

Peña Nieto. In the administration of President Andrés Manuel López Obrador have a record of 44 journalists murdered. México has been declared for more than a decade as the most dangerous country to practice journalism, according to the indexes of international free press organizations.

The *Report on Violence against the Press in Mexico* for the first six-month period of the year 2023, presented by Artículo 19 Office for Mexico and Central America, registered 272 aggressions, three of them reported as possible murders linked to freedom of expression. Political and security reporters are the ones who register the highest number of aggressions in their coverage and within the possible perpetrators, public officials and private individuals top the list, followed by civil forces, political parties and military armed forces. However, according to a survey that measures violence to journalists in the state of Tamaulipas in Mexico, are those related to their work relationship, within the economic margins, which refers to border journalism; they are the most common, among them are: hiring with low salary, limitation of labor support against aggressions, censorship of the media, self-censorship and misinterpretation of information (Cepeda Robledo, 2018).

Journalists operate with a precariousness declared as acute and this is aggravated according to factors such as age, gender, employment relationship and the type of media for which they work (Rick, 2024). Specifically in Mexico, the study on *Journalists in Mexico: survey of their demographic, labor and professional profiles* (2023) applied to 400 professionals allows identifying challenges related to working conditions such as:

- a. Impunity rates, of the total number of assaults, only 14 percent had access to government protection.
- b. Low salaries, a quarter of the journalists in Mexico earn less than 9,000 pesos per month, which represents less than two minimum salaries in 2024.
- c. Long working hours, journalists work two or more jobs.
- d. Without access to social benefits, few journalists have social security, housing, Christmas bonuses and paid vacations.

With this salary, journalists are part of the group of workers known as the "working poor" (because they do not exceed the income threshold of 3.2 dollars

per day). The so-called working poor (Auvergnon, 2012) are characterized by long working hours and very low incomes that affect their quality of life. In addition to this, journalists can also be grouped among the workers that make up "the precariat" (Standing, 2018) because they do not have job security, are informal, have no rights, depend on bureaucratic will, have no occupational identity, do not control their time and are overqualified.

The Mexican Secretary of Economy indicates that during the second quarter of 2024 there were 32 thousand workers dedicated to journalism and writing, representing an increase of 10 percent over the first quarter. In addition, journalists work more than 40 hours per week, 3 percent have another job, and 39 percent are informal workers. The conditions of the press in Mexico are at risk of suffering any expression of violence and precarious, derived from what could be a struggle for media power.

5. Working Conditions of Journalism in Zacatecas, Mexico

Zacatecas is in a frontier territory, a space where the federal government does not intervene in the relationship between the State and the media. The politic figure of the governor reigns and with it the media logic that determine the forms of news production. A state dependent on federal programs and resources, security policies consist of remaining on the periphery; in discourse and in practice it leaves the responsibility to the federal government. The state of Zacatecas is among the top ten nationally in terms of the number of intentional homicides committed in the last five years, leading one of the cities with the highest perception of insecurity: Fresnillo, Zacatecas. Hanging bodies on bridges, burned vehicles that close federal highways and a government demoralized by bad media decisions, allow the state to be seen as a conflict zone.

In terms of crimes against journalists at the national level, they are not among the first places, but this does not mean that violence does not touch informers but rather speaks of forced silences areas where journalists have no voice, news without signatures, half information, to avoid discomfort, leaving open the door to rumor, uncertainty and fear. In Zacatecas it is evident the conformation of an *anthropology of silence* (Lomnitz, 2023).

In the last 4 years, two photojournalists have been murdered in the municipalities of Zacatecas. On December 9, 2020, in the municipality city of Jerez (50 miles from the principal city), independent photojournalist named Castaño was murdered; the association *Artículo 19* report describes that after 9:00 a.m. he went to the report of two bodies abandoned on a public road, from which he did not return; to present day his murder remains unpunished. On March 4, 2022, in the municipality of Fresnillo, J.C. Muñiz⁴ (another free journalist) was murdered, he was reported live for the free media *Testigo Minero* and took advantage of his time on the streets to drive a cab. In his case, the State Prosecutor's Office initiated an investigation with a differentiated perspective as dictated by the Homologated Protocol for the Investigation of Crimes against Freedom of Expression, obtaining the conviction of two people for his murder.

There is also a record in *Artículo 19*⁵ of other types of aggressions against journalists in Zacatecas. In September 30 of 2014, in the municipality of Fresnillo, where armed civilians fired gunshots at the facade of the house of journalist named M. Juárez. Another case also recorded in this portal occurred during the six-year term of Zacatecas state Governor Alejandro Tello Cisterna (2016-2021), where public resources were used to exhibit the image of free female journalist L. Gutiérrez of “Azteca Television”, for alleged reports that served as blackmail to obtain advertising agreements. Curiously, one day before the end of the administration, the Human Rights Commission of the State of Zacatecas issued a resolution requiring the governor within 48 hours to make a public apology to clean up the public image of the journalist, a situation that did not occur.

In the last 10 years massive layoffs in the press are common; well-known companies such as “Televisa Zacatecas” dismissed more than 40 workers overnight after 28 years of operation (Astilleros, 2024). In addition, journalists

⁴To respect their memory, the journalists' surnames are included. Many of the cases presented are still under investigation, although the authorities and investigators have obtained few results.

⁵ Article 19 is an international organization that defends freedom of expression and the right to information. Its name comes from Article 19 of the Universal Declaration of Human Rights, which states that “everyone has the right to freedom of opinion and expression; this right includes freedom to hold opinions without interference and to seek, receive and impart information and ideas through any media and regardless of frontiers. In Mexico and Central America, this association works to protect and promote these rights, and monitors and denounces violations of press freedom, in addition to supporting journalists and media outlets facing threats and attacks.

joined nationwide protests to condemn the working and risky conditions in which they work, during the various days called by the journalists' guild nationwide, derived from the deadliest year for journalism in Mexico, there was a demand for a protection mechanism for journalists in the state, a situation still not addressed by local legislators (Belmontes, 2022). Actual State Governor: David Monreal, has stood out for his statements that criminalize and stigmatize the press, naming them "spokespersons for crime", one in March 2022, where he recanted and had to apologize (Linares, 2022), however, once again he blamed the media for the negative perception of security in the state, this occurred during a collective interview with various media in September 2024.

Likewise, on March 8, 2024, in Zacatecas during the Women's Day demonstration, two female journalists were detained during their coverage of the march, along with ten other young women who were in the Plaza de Armas. Police from different security institutions also scuffled with other women photojournalists who were doing their work, resulting in three injuries; one of them, was unable to work for days. According to medical reports, she suffered serious injuries inflicted by excessive force on the part of the police forces assigned to guard the event.

6. Conclusion

Among the multiple contradictions of the neoliberal economic model to which our territory is subjected, is that of journalism. An activity institutionalized as a counterweight to the power that monitors and denounces abuses, but on the other hand, as a company that must generate profits to survive within the system, has as a client the one it monitors. In this paradoxical game between the State and media owners, the journalist is in the middle. A worker who is subjected to the violent nature of work in the capitalist system and therefore his work has a tendency towards precariousness, but in addition to this there is the conflict of a factitious power struggle, the media, which is in dispute. In Mexico, for many years it was in the hands of the owners of the media monopolies and now it is under debate because the State has found ways to weaken it.

The case of Zacatecas is interesting because it provokes to observe the phenomenon from a territory where the economic, political and social margins in a context of violence, allow to observe the violent character of a system that

impoverishes the worker, a state that criminalizes a counterweight and a context of violence that provokes self-censorship.

The determining conditions of labor described by Engels in 1876 are still valid. Work not only defines the physical conditions of evolution, but also those of life, since the violence inherent in certain professions becomes a determining factor. Professionals who choose to dedicate themselves to journalism assume the constant risk of death, kidnapping or exile. This work does not ignore the existence of other figures in journalism who benefit from the political system. However, the job of reporting on what is dictated by capital, or the government of the day is not at risk. Therefore, journalistic work is considered here not as a simple reproduction of information, but as a generator of truth and, consequently, as an agent of transformation.

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9

A CRITIQUE OF LIBERAL VIEW ON THE AKP FROM THE POLITICAL ECONOMY PERSPECTIVE*

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Abstract

From a critical perspective political economy assumes that there is a close relationship between politics and economics. Unlike classical political economy, it centers on power structures with political and ideological backgrounds, putting them at the forefront of its analysis without making a vulgar distinction polity and economy. An uncritical example of such perspective is seen in the analyses performed towards the AKP. These analyses has been mostly made by some leading public intellectuals with different political-ideological orientations from right to left in Turkey, largely used the arguments of classical political economy. They have a perspective based upon an idea of Islamism being framed around economy and civil society by disregarding political and ideological processes. This study tries to criticize such perspective using a critical-Marxian political economy, and deals with and discusses on the political, economic and ideological aspects of the AKP and its Islamism together by focusing on the term politicization of Islam in Turkey.

Keywords: Liberal View, AKP, Islamism, Public Intellectuals, Political Economy
Jel Codes:

* Part of this study is based upon the unpublished doctoral dissertation by the corresponding author, entitled “The Critic of Liberal Approach towards JDP”, Department of Sociology, Middle East Technical University, Ankara, 2018.

1. Introduction

There is ‘no organization without intellectuals’, Gramsci (1992) enounces in his study on intellectuals, thus posing a fundamental argument with regard to the particular types of intellectuals coincided with particular types of organization. He states that it is a decisive situation for intellectuals to form some ideas, organizing and leading them for a -political- organization in politics. They have been intellectual organizers and leaders of importance in the emerging and rising of a -political- party or organization (Gramsci, 1992: 334-335). In this respect, it is no surprise for the AKP to have intellectual power behind its rising to power in 2002. Though not spoken of a clear link between intellectuals and class background, that is of an organic intellectual, in the case of AKP in a Gramscian sense, it can be argued that there has been a particular type of intellectual corresponding to a -political- organization like AKP. We call it -such a type of intellectual- public intellectual (Posner, 2001; Di Leo and Hitchcock, 2016; Cummings, 2005). So, if not an organic intellectual in Gramscian sense, it seems to have strong public intellectuals to organize its own -political-organization and take it the lead by framing and referring to some ideas and values. They played an important role in the AKP’s coming to power in 2002, consolidating and maintaining its political power and politically and ideologically constituting its own powerful hegemony. Alongside a moral-intellectual leadership in Gramscian sense, the AKP’s public intellectuals performed a significative task in the formation and establishment of the AKP power.

Then, who is public intellectual? How is it defined and framed? What type of role and function does it undertake in politics? These questions are intensely significant in terms of understanding what public intellectual is, making it clearer and accurately framing. Firstly, public intellectual is not what philosophers talk about a ‘natural kind’, something that comes into being independently of the needs and purposes of the human observer. In a sense, defining public intellectual is required demarcating an area of social life that are more likely to attract intensive attention. Actually, the process of demarcation truly starts with the ‘intellectual’, generally comprehended as someone seriously and properly concerned with the things of the minds (Posner, 2001: 17). Public intellectual has a contradictory position whether conservative or radical or some idiosyncratic combination of opposing positions (Di Leo and Hitchcock 2016: 9). Besides, it has also an essential position to construct a bridge the world of intellectual

(whether academics and journalists, or writers and columnists) and the general public, to provide thoughts and analyses that exemplify and help people to make their understanding of the world around them deeper. As the leading American sociologist C. Wright Mills stated, neither the life of the individual life nor the history of a society can be found out, without understanding both. As a matter of fact, public intellectual helps us comprehend some connections between them, i.e. individual and society, and the historical, social, economic and political forces that molds and transform them (Corcoran, 2012: 4-5). In so doing, public intellectuals express themselves in such a way that is accessible to the public, and the core of their expression is on matters of general public concern of (or inflected by) a political or ideological cast. They may or may not be affiliated with universities; they may be full-time or part-time academics; they may be journalists or publishers; they may be writers, columnists, or artists. Even, they may be politicians, or officials; they may work for think tanks (Posner, 2001: 35). Hence, it would be surpassingly inaccurate to make the assumption that public intellectuals are certainly or even often academics. The world of journalism, within which is columnists and freelance pundits of various intellectual competences, has been an incontrovertible tradition of public intellectualism (O'Connell, 2012: 16). Ranging from academics, writers, artists and publishers to journalists and columnists, public intellectuals potentially undertake an active role process by bringing forward moral frameworks and schemes of interpretation which are accessible to the wider public (Corcoran, 2012: 5). They write for a general public, or at least for a broader than just academic or specialist audience, dealing with 'public affairs', discussing lots of political and cultural matters, in which are predominantly ideological and discursive debates. As well as 'social critic', they are fundamentally 'political intellectual' (Posner, 2001: 23-24). This 'political' intellectual can take the lead some -political- organizations or groups by forming political and ideological frameworks, framing political issues and public debates, and provide them to have political power and become an ideological-hegemonic force. Indisputably, Turkey's AKP is one of the most salient examples of this aspect of public intellectuals.

On this point, it can be spoken of three major public intellectuals that played a significant role in the AKP's coming to power and its undertaking political-ideological hegemony. These are the leading public intellectuals with liberal, conservative-Islamist, and left-liberal or liberal-left orientations. This is one of fundamental issues that need to be debated in the AKP period. That is because

they made inestimable political and ideological contributions to the AKP politics, strongly supporting by trying to frame such politics from a particular perspective. This perspective is liberal and built around dominant liberal view in Turkey. It has an idea of historical-social Islamism grounded by the liberal view. This Islamism is a basic argument for the liberal view in that the AKP has been dominant political and ideological force and created its own hegemony. The liberal view and its understanding of historical-social Islamism reflect a particular political economy perspective in defining and interpreting AKP politics and drawing it certain political and ideological frame. This chapter discusses such political economy perspective mostly based upon the opinion of classical political economy', attempting to criticize it from a Marxist political economy perspective.

Firstly, this chapter debates on political economy as a perspective, and tries to form a frame for it by dealing with different approaches in political economy. Secondly, it struggles to define, elaborating the political economy approach to the AKP by liberal view. Thirdly, starting from a particular political economy perspective, it addresses and criticizes the political economy understanding of the liberal view. Finally, discussion is finished up with the section conclusion.

2. Political Economy as a Perspective

Political economy is a disciplinary approach. It essentially opposes the argument that politics and economy should be seen autonomous, and that the areas of activity can be just understood through these disciplines' own views separately, as fundamentally self-sufficient and self-constituted. That is why economics is concerned with the laws which rule the system of production, exchange and distribution. Politics is also about the processes through which authoritative decisions are made in society. As a result, the two have little bearing on each other (Chandhoke, 1994: 15). Political economy, on the other hand, is described as a study of the relationship between political motivations, interventions, and economic policy. It is fundamentally interested in political, cultural and ideological forces. It deals with how some cultural -and ideological- processes imposes upon economic actions and dynamics, how religion directs to economic behaviors, and how whether political, cultural-ideological or religious all the conflicts is closely associated with economy and economic processes (Alesina, 2016: 1). Therefore, it expresses a strong criticism of the opinion that economy and politics can be comprehended distinctly from each other. political economy

brings forward a critical approach, since it sees societies in terms of domination and oppression. From a holistic perspective, it argues that economic and politics broadly constitute each other (Chandhoke, 1994: 15-16). In a nutshell, political economy is an approach that studies the interrelationships between political and the economics. It can be characterized as the analysis of the political factors in their interactions with economics (Gupta, 1992: 283). It highlights the relationships, contexts, dynamics and processes between politics and economy, asserting that they cannot be absolutely separated from each other.

However, it is needed to state that politics and economy should be broken with each other with regard to their structures, dynamics, relations, and processes. The roots of the separation between economics and politics can be traced to the emergence of the economy as an autonomous field which pursued the formation of capitalism. At this point, it is observed that classical political economy made a significant contribution to being laid the bases of the divisions between economics and politics by prioritizing the economy, disregarding the polity. At the core of the theories of the classical political economy is the notion of civil society. It signifies the system of want-satisfaction, arising as a reply to the demands of individuals going after self-interest and the satisfaction of wants (Chandhoke, 1994: 16). It and its political economists only focuses on economy and its structures and processes within itself, as purely distinguished from politics and political field. For example, economic aspects are the major units of analysis for them to be considered, ranging from production, free trade, *laissez-faire*, anti-interventionist, private property, industrialization, mechanization, competition, and individualist thinking, i.e. individual interest and satisfaction (Silvant, 2024: 5-7). The classical political economy and economists generally band together in their recognition of the importance of modes of production. This requires minimal government in society governed by competing self-interests, more importantly, stipulating a fair competition in an uncorrupted free market, where too much distinct self-interests would balance each other for the general good (Wolloch, 2022: 294). The term competition is a decisive component here. It is not only an economic concept but also a political and moral principle in that it assumes the idea of the social harmony of private interest. Thus, as well as the social harmony of individual interests, it at the same time underlines that the room for state intervention is necessarily restricted (Beraud and Silvant 2024: 68; Beraud and Numa, 2024: 12). This is because intervention by an external agency, like the state, in civil society can be disruptive of this harmony. Strictly speaking,

this perspective trivializes politics, and attention attracts from the decisions and actions of the political institutions, to the ways in which individual acts and needs are constituted and satisfied in civil society. Basically, it centers upon civil society, that is not only with material organization, but with regulative principles of society, such as the value produced by labour, and the distribution of incomes. All these influences an absolute separation between the economic and the political, depoliticizing the economy (Chandhoke, 1994: 17). Generally speaking, behind such perspective seems to have had a powerful economism that sees economy as some economic processes and type of production within itself, as a part of separation of civil society-state or the political and the economy, by undervaluing political and ideological field, structures and processes.

We have a critical remark about such perspective. It uses a Marxian political economy in criticizing that perspective. In the Marxian theory of political economy, as the field of a relation of production economy takes on the most significant and strategic position. It functions not only as a major area for other economic relations, like the relations of exchange, of distribution, of consumption, but as a sphere of the political as well as the ideological superstructures (Gupta, 1992: 285). As a theory, Marxist thought highlights intellectual and political engagement, claiming that politics and economy cannot be isolated from each other. It sees the economy itself as a supremely political object. Political conflicts over power are fundamentally conflicts directly related to access to economic resources. So, it observes the economy and politics as analytically distinct, but conceptually fused (Chandhoke, 1994: 20). Looking through a 'purely economic' standpoint disregards the other major elements of economy and the nature -the essence- of capital as a juridical, and -ideological-political form (Marcus, 1975: 352). As the political and ideological factors/structures would play an active role in the structural determination of social classes, it cannot be the case for separating them from economics, and type and relationships of production. So, in a Marxian political economy, the main questioning of interest is the character of the capitalist state, namely, what are the characteristic components of such a state and what class interests it mobilizes and why (Gupta, 1992: 285). As a basic critical approach, the Marxian political economy takes as its starting point the assumption that a given human society is materially rooted and politically formed. It sees the economy itself as a deeply political object. Because the economy and politics has strong ties between them, as constituting each other. The -capitalist- production process comes into being

by a supremely political act. The economy does not operate in a vacuum. It is a part of a larger political dispensation. The basic reason why this is so is that the capitalist economy would not exist, unless the favorable political conditions are come forward. In capitalism, the existing relations of production reflect a particular form of juridical and political-ideological relationships – modes of domination and coercion, forms of property and social organization (Chandhoke, 1994: 22-23). Thereby, in the Marxist critique of classical-liberal political economy, what is so clear is that political-ideological structures and processes are so decisive and crucial as economic ones are. They are something generating rather than excluding each other. Particularly, in capitalist economy, the political and ideological processes are the most significant and essential part of what comes about in the structure and relationships of production. The political cannot be easily ignore. Rather, the role of the political in the economics needs to be explicitly recognized and carefully took account (Gupta, 1992: 287).

3. The Political Economy Approach to the AKP in Liberal View

Sharing among a great many leading public intellectuals in Turkey from liberals, conservative-Islamists to left-liberal and/or liberal-left, the liberal view looks the AKP politics and its changing understanding of Islamism through a more historical-social Islamism. The historical-social Islamism is grounded on economy, free trade, civil society, individualization, and social class by keeping out political and ideological structures and processes. It might be called a reading of the classical-liberal political economy of Turkey's Islamism in general, the AKP and its Islamism in particular. One of the foremost concepts of this reading is globalization. The foregoing public intellectuals discuss the concept on the basis of economic processes, i.e. production, trade, or individual thinking. They underscore the term globalization in different ways. For example, one of these leading public intellectuals, Etyen Mahçupyan speaks of a global condition in debating Turkey's Islamism, stating that:

Following the Welfare Party and the AKP, Turkish Islamism has a Muslim mass movement... This movement aspired after globalization in accordance with individual goals, attempting to produce new centres by using distinct channels (Erden, 2018: 160)

Stating that behind the post-1980 Islamism mostly lied globalization, Fuat Keyman amounts a similar view, underlining free market economy and economic liberalism. He says that:

The striking development of the post-1980 period has been free-market, economic liberalism, globalization, and the transition from import substitution to export promotion. This new situation that all these revealed in hegemonic manner fundamentally created a very important break in Islamism. In Turkey, the post-1980 Islamism experienced a critical breaking point with ideology and sociology (Erden, 2018: 161).

One of the leading public intellectuals defined as left-liberal and addressing globalization from a different perspective Ömer Laçiner talks about a structural change. Together with the emerging of such change, he clearly expresses that:

With Islamist-conservative tendencies these men had no longer intentions to open small grocery store, or to engage in fresh vegetables export. Rather, they have attempted to set up large factories from furniture, textile, and elevator to construction. They now pursue international things, namely money movements and financial world, by coming into contact with outside. After this, there would be a new sociology and Islamism which all these brought along (Erden, 2018: 161).

Nevertheless, unlike Laçiner, Baskın Oran sees globalization as a major economic change transforming Islamism. To him,

Introduced as international capitalism, globalization would be an economic variable because it has bourgeoisified these groups, namely Islamists, taking up foreign business. Meanwhile, thanks to bourgeoisifying, they would turn into religious Muslim, not Islamists so on. In a sense, they would cut loose from being Islamist as a political outcome which international capitalism has created (Erden, 1980: 161).

Globalization is a complicated economic process. It paved the way for a significant change and transformation in processes of production, forms of trading and economic sectors. At the same time, it brought about the flow of images, symbols, knowledge, identity, and culture, accelerating the growth of media systems and communication technologies. In other words, the outcomes of globalization are also needed to see in identity, belonging, and new types of

socialization. One of the prominent liberal public intellectuals, Ali Bayramoğlu touches on this side of Turkey's Islamism, along with AKP. He argues that:

After 1980, Islamism can be interpreted as the emerging of a new identity following a new socialization, network, belonging, and identity- based-and - individualist movement. Such an Islamism would be a reflection of globalist Islamic language and outside world. If this new politics is wished to be understood, it will be, too, needed to look at globalization discussions (Erden, 2018: 162).

With liberal-conservative dispositions, a journalist, Levent Gültekin thinks that there has been some powerful connections between globalization and mass media and communicational tools. In company with production technologies in economy, they created a new situation in the formation of individualization and individual thinking in world. Gültekin puts it this way:

For instance, in the past we were living in a village where we all generally share about same understanding in the matter of Islam. But, now the world became a village and communication tools gradually developed. What one understand from Islam is no longer same with other. One understand something else while reading a verse from the Quran, someone else does more something else when reading (Erden, 2018: 162).

Cited above the public intellectuals have read globalization as a form of the change and transformation coming about in economy and economic processes, media technology and communicational tools. They restructured the social base of AKP Islamism and Turkish society, particularly bringing about a major change in Turkey's Islamism as well the AKP politics in terms of class formations and capital accumulations. The driving force of such change and transformation has been economic liberalization and global-neoliberal economy. Globalization is a decisive process in the change and transformation in question. It has played a major role in either economic structure and processes or the formation of individual thinking and identity and individualization.

Another dimension of globalization is composed of international dynamics and global forces. One of them is European Union. In their approach to the AKP, the public intellectuals remark that it has been one of the crucial points of globalization following economic liberalization initiated in the 1980s. It was a

big step for the AKP in that it symbolizes a fundamental change. Fuat Keyman observes this as a part of the change in the AKP's approach to global forces. He denotes that:

In the AKP, the dominant political disposition more interested in the integration with global and European markets. The actor of this change has been the JDP. This party has always attached a great importance to free market. When looked at free market-Islamism relationship, free market preceded the other within the party (Erden, 2018: 150).

From the liberal public intellectuals, also an academician and journalist, İhsan Dağı sees the AKP politics as an outcome of globalization process, trying to read its changing understanding of Islamism in the context of global politics. He enunciates that:

Turkey the EU politics, the integration with international order, and the understanding of a global politics create some fundamental changes in the sense of law, democracy, and individual autonomy. As a matter of fact, the AKP has also adopted and maintained such politics by looking at political constraints in Turkey, and we have supported it as well. As liberals, we have seen and promoted this politics as a significant step and a way out for getting rid of the present tutelage regime in Turkey (Erden, 2018: 181).

Another significant concept of the political economy reading concerning the AKP is that of civil society. Interpreting the AKP from a political economy perspective, the foregoing public intellectuals also use the term civil society, trying to frame and analyze the AKP and its Islamism through it in their discussions. They consider that Kemalist-modernist revolution and the 'strong state tradition from the Ottoman to the Kemalist-secular republic, posed a challenge to the formation of civil society in Turkey. Their argument for civil society has powerful economic implications, as well as an issue of democratization in Turkey. One of the foremost left-liberal public intellectuals, Laçiner poses lack of civil society as a basic problem, seeing the AKP as an opportunity in the consolidation of civil society. According to him:

There is a fundamental conflict between Turkish military, which has been the leading actor of the coups with its interferences in democracy and -civil- society in Turkish political history. A democratization has been possible by making this

society stronger, which has mainly consisted of Muslims, or religiously-conservative groups culturally and middle classes economically, on the condition that Turkish army's power on Turkish politics and democracy has been shattered and deactivated (Erden, 2018: 103).

Unlike Laçiner, Keyman tries to make a reading of the AKP politics through the center-periphery relationships. He emphasizes economic structures and processes, understanding and framing civil society in a more economic sense. He explicitly argues that:

Economic Islam gradually begun to be important. There was an Islam which has become stronger by excessively integrating with economy. More importantly, after 1980s, there was an Islamism that had been the carrier of this change and gained strength with globalization and Europeanization in the periphery on the basis of urbanization and the formation of middle classes in Anatolia in the context of the centre-periphery relationship (Erden, 2018: 107).

With strong economic bases, this reading is articulated with neoliberal economic policies dominating in the post-1980 Turkey. From the left to the right the public intellectuals begin to lay stress on some economic processes, such as production, capital, technology, and market. Among the public intellectuals some draw a special attention to the post-1980 period in that it was restructured by the neoliberal economic policies which had provided important opportunities and potentialities for new social groups or classes laying the bases of Islamist politics. For instance, Laçiner overtly underscores this:

The 1980 was a break and jumping. A critical social base began to emerge. In 1980s, in Turkey a seriously provincial awakening became economically. In earlier times, in Anatolian the provinces like Denizli or Çorum were being ignored. But now? From Kayseri to Gaziantep, the merchants turned into industrial things. They were carrying on business with handbags. The exports were increasing...etc. They began in 1980. In Turkey total foreign trade volume (exports plus imports) was 10 billion. It has been 400 billion at the present time. Furthermore, whilst all of these had been doing, in Turkey the traditional riches protected their industrial positions, but their shares in total decreased. The brand-new actors were born. An industrial and merchant class were rising, which consisted of those who had big companies with almond mustaches and Sunni background. It was something that had lent a persuasiveness and

seriousness to expressions which we were developing the country and either doing this or it. Those were forming the AKP's backbone as a -new- middle class." The AKP was taking an active role in this class' social leadership (Erden, 2018: 175-176).

The Özal period was a critical point for a neoliberal reading of Islam(ism). As Laçiner stated, new social actors were arising. Behind the emergence of those actors was Özal's neoliberal economic policies. Bayramoğlu also gives particular importance to this period which Özal carried his own policies into effect. He pronounces that:

In the Özal period, in the pursuit of somewhat being prepared technological infrastructure and being incorporated into the small markets in the West (of Turkey), we passed from a time when the small and medium-sized capital ever-increasingly had a chance and demanded from either the bank, the economic system or the share in the centre. This period was also the economic infrastructure of the Welfare party and Islamic movement and one that those actors and the small and medium-sized capital had burst. That is to say, on the one hand, an Anatolian capital which has been reborn as a class. This at the same time was a formation to have arisen out of crowding most elements like socio-economic causalities, class factors, and so on together, in the world and Turkey, as we know (Erden, 2018: 176).

The AKP's public intellectuals move from a particular political economy perspective, trying to frame the AKP politics and its Islamism through it by referring to globalization, civil society, neoliberal process, individualization, free trade, capital accumulation, and international dynamics. In so doing, they bring forward an idea of historical-social Islamism, and struggle to define this Islamism on the basis of the changes and transformations in socio-economic processes from globalization to capital accumulation. The basic feature of such idea of Islamism is that it ignores some political and ideological processes and structures, and attempts to set forth a view of Islamism by overlooking political-ideological factors and influences. In other words, it plays down political and ideological-intellectual engagement. It demotes politics and depoliticizes the economy based on certain definition of Islamism, i.e. historical-social Islamism. What fundamentally provides this is the political economy approach to the AKP by the liberal view.

4. Some Criticism on the Political Economy Understanding of Liberal View on the AKP

Contrary to a liberal view on the AKP, it can be look through a more critical perspective in discussing the AKP's politics and its Islamism. We call it critical political economy perspective with powerful Marxian orientations. From such political economy perspective, in dealing with the AKP politics and its İslamism we consider political and ideological structures, contradictions, and processes, discussing the political and ideological aspects of economic change and transformations and their close relationships among them, rather than making a vulgar distinction between politics and economy. This perspective is based upon an idea of historical-political Islamism, fundamentally focusing on the politicization of Islam in Turkey. The historical-political Islamism is an understanding of Islamism that focuses on how Islam has been politicized in general within political structures and processes, in particular Turkish political history and structures. On this point, in the case of Turkey, this Islamism has been arisen as a result of various historical-political processes occurring in Turkish politics. strictly speaking, by a historical-political Islamism what we mean is an Islamism as the politicization of religion based on politicizing cultural, moral and symbolic aspects of Islam from Tibi's approach (Tibi, 2001). Tibi emphasizes that with the foregoing aspects Islam is an instrument of political power and a guarantee of legitimacy, along with having the opposite political functions. It promotes a political mobilization with the support of moral, cultural and symbolic components, legitimizing the existing political order instead of destabilizing it by attributing to it its religious symbols (Tibi, 2001 and Tibi, 1983). This politicization is not a one-way process, in sense of politicizing Islam under the leadership of the National View. On the contrary, it is a two-way process that the politicization of Islam has been realized with cultural, ideological, moral and symbolic elements. During the politicization, there has been the secular establishment on the one side, and Islamist politics in Turkey on the other. For instance, the 1940s and 1950s' secular establishment was more distinct from that of the 1920s and 1930s, since it softened its stance against religion (Zürcher, 2004). In the same vein, the supporter of Turkish-Islam synthesis and the main actor of political and ideological use of Islam, the 1980s' secular establishment had a more different attitude towards religion, Islam, compared with that of the 1960s and 1970s (Kaya, 2004: 74-106). Taking all of these into account, it can be concluded that religion, namely Islam, was politicized by the secular establishment in different periods. This politicization ended up with the

use of moral, ideological, cultural and symbolic elements of Islam in the context of being an essential part of identity of Turkish state, and of the increase in the visibility of religion in public sphere and social life.

No doubt, the politicization of Islam has not singly brought the using of its moral, ideological, cultural and symbolic elements to the forefront. It has had a particular political economy viewpoint. During and after its foundation, Turkey's Islamism was opposed to capitalist order and its free-market economy due to having more developmentalist and statist opinions, and an idea of social justice. It maintained this political position for a while longer, after the 1980s in parallel with the mid-1960s and the 1970s. However, the 2000s onwards, following the establishment of the Islamist Virtue Party this position changed, and adopted a new political-ideological view in accordance with the political-ideological dispositions by new Islamist-conservative biased capitalist class and/or economic actors. It was no longer the case for any objection to capitalist order, neoliberal politics and its economic policies, rather embracing the dominant argument that there has been no conflict and incompatibility between Islam and capitalist economic system (Hoşgör, 2014 and Sen, 2010). The AKP has been one of the leading actors of such politicization of Islam in the post-2000s through its pro-capitalist political-ideological stance based upon neoliberal politics and its economic policies. From a political economy perspective, its changing politics clearly shows how closely ties there are among political, ideological and economic components. It proves that it would not be an accurate view to make a political economy analysis by separating economic aspects from political-ideological ones. Based upon a critical political economy view, in Turkey the politicization of Islam undisputedly expresses once again that political, ideological and economic elements are intertwined with one another in Althusserian sense (Althusser, 2014).

In Turkey, Islamism as a political-ideological current constitutes a collective-political entity, as mentioned above, which has been grounded on nationalist and conservative themes, and moral, symbolic and cultural elements of Islam. Basically, what has created this collective-political subject in a sense is that it has been politics beyond given economic interests and cultural bases of one social group with religious- conservative dispositions, by shaping in certain political and ideological structures. They consist of a number of ideological-political compositions –terkip- and syntheses, and political socialization, experiences, and

struggles in itself, alongside the state and its ideological and repressive apparatuses. The politicization of Islam can be traced with political and ideological structures in question. The foregoing politicization has laid the bases of a historical-political Islamism. Such Islamism has provided a basis for the formation of nationalist-populist politics shaped around Turkish nationalism, and a culture-based populism, which would predominate its moralist, symbolic, intellectual and ideological-cultural aspects in Gramscian sense (Gramsci, 1992).

5. Conclusion

This chapter has tried to understand and explain the AKP politics from a political economy perspective with critical-Marxian bases. It forms a frame for its critical perspective by citing from opinions by the AKP's public intellectuals. This frame argues that a vulgar distinction between politics and economy poses a fundamental obstacle for the understanding of the AKP politics on the basis of a classical political economy. The argument, politicization of Islam, explicitly sets forth this. As a result for the emerging of a historical-political Islamism, this argument shows us once again why such critical-Marxian perspective is of basic importance in comprehending and explaining the AKP and its Islamist politics.

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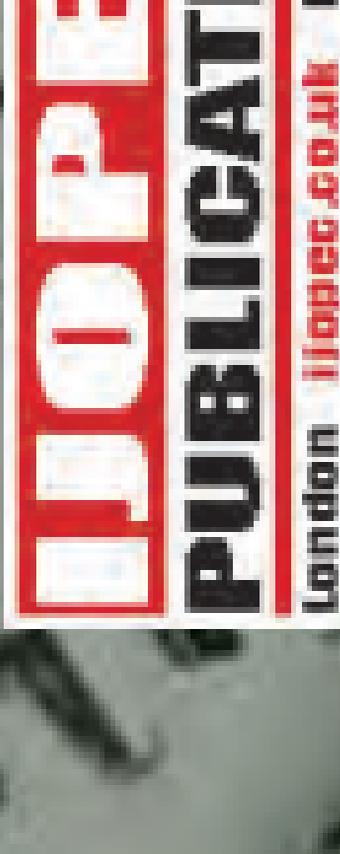
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ECONOMICS & POLITICAL ECONOMY