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PREFACE

Economic crises and social events, epidemics, political factors, natural disasters, digital age, communication, leaders, people's abilities affect social and economic events. In the globalizing world, despite technological developments and the parallel developing information age, it is very difficult to access systematic scientific information. The aim of this study is to examine the economic, financial and social events experienced in the world and in Turkey and evaluate their effects and consequences. Since social sciences generally examine social events and the effects of human factors, it is quite difficult to reach clear results with controlled observations compared to science. Politicians, scientists, experts and sector managers are trying to find effective, efficient and sustainable solutions to social and economic events. The aim of this study, which is carried out in the field of finance, social and humanities, is to examine financial, economic and social events and to investigate what can be done for developments in the field of social sciences.

This valuable publication titled 'International Economic Finance Social, and Humanities Research' consists of studies in many different fields, including improvements and developments in the field of social sciences, and international qualitative and quantitative research. I would like to express my gratitude to my esteemed professors from different fields and universities for their efforts and contributions in the preparation of this study.

I would like to thank my esteemed professors from different universities who contributed to the field in the emergence of this study for their efforts. To our esteemed professors who served as referees by reviewing the publications and sharing their values, opinions and contributions with us, to the "BİDGE Publishing House Employees" who facilitated our work by building a bridge between us and our teachers and did not spare their help, and to my mother, father, siblings and my beloved mother, father, brothers and sisters

who always stood by me and supported me, who made life more meaningful for me. I also owe a debt of gratitude to my son Abidin Tuna Çöğürcü

I hope that the study will be useful to my esteemed professors and dear students and make significant contributions to the field of social sciences.

Editör

Doç. Dr. İclal ÜNÜVAR

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CHAPTER I

The Comparison of Islamic and Conventional Banking In the Context of Behavioral Finance

İbrahim Halil SUGÖZÜ[1]
Sema YAŞAR[2]
Can VERBERİ[3]

Introduction

Conventional banks, which emerged during the Middle Ages when the concept of interest and usury began to institutionalize in its modern sense, have experienced their most illustrious period with the acceptance of the fractional reserve system. They have become an inevitable part of production and consumption in almost all

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countries around the world. Due to the relaxation and near abolition of the prohibition of interest in two of the three Abrahamic religions, conventional banks are particularly considered legitimate in Christian Western countries. Traditional banking is based on interest-bearing transactions and acts as an intermediary, facilitating loans and offering interest-bearing accounts to depositors. However, the majority of Islamic countries have conventional banking practices in place. Moreover, in the Islamic world, the absence of any flexibility in the prohibition of interest, as seen in the West, and the strict maintenance of the ban as it was initially, has led the devout Muslim community to refrain from investing their savings in conventional banks or taking loans from them. Consequently, they have faced economic hardships and serious grievances. Indeed, whether in countries with a predominantly Muslim population or those with a Muslim presence, the idea of integrating this community's savings into the economy and finding solutions to their credit needs has facilitated the emergence of Islamic banking.

The banking landscape is marked by the coexistence of two predominant banking systems: conventional banking and Islamic banking. Conventional banking, the more widespread of the two, is characterized by its reliance on interest-based transactions. Banks in this system act as intermediaries, facilitating loans for borrowers and offering interest-bearing accounts to depositors. This model is deeply ingrained in the global financial markets and plays a pivotal role in economic development (Beck, Demirgüç-Kunt, & Merrouche, 2013: 433). In the global context, Islamic banking, known as participation banking in Turkey, which is an interest-free banking system, is referred to as Islamic participation banking in our study. Despite having the same underlying monetary system and using similar methods to conventional banks, the banking system that conducts financial transactions with instruments perceived to be devoid of interest-based returns is called Islamic participation banking. Islamic banking, on the other hand, presents an alternative that aligns with the ethical and moral principles of Islam. Prohibiting the use of interest, Islamic banks instead engage in profit-and-loss

sharing arrangements, asset-backed financing, and trade financing methods like Murabaha and Ijara. The rationality behind financial decisions in these two systems is a subject of considerable interest. In conventional banking, rationality often equates to maximizing financial returns, with decisions driven by market conditions and interest rates. Islamic finance (banking), while also seeking profitability, incorporates additional layers of rationality that consider social welfare, ethical financing, and adherence to religious tenets (Chapra, 2008: 32).

Earning in the context of these banking systems is not merely about the financial bottom line. It encompasses the broader socio-economic impact of banking practices. Conventional banks measure success in terms of profitability and shareholder value. Islamic banks, while also concerned with financial viability, prioritize the equitable distribution of wealth and community development (Siddiqi, 2006: 2, 23). The importance of comparing these two systems extends beyond academic curiosity. It has practical implications for investors, consumers, and policymakers. Understanding the differences in rationality and earning can inform choices about where to bank, how to invest, and which policies might promote a more equitable and sustainable financial system.

After its inception, Islamic banking quickly spread worldwide and began to develop institutionally. Even in Christian Western countries, significant importance has been given to this banking system to attract Muslim savings, and it has been supported. However, Islamic banking's limited range of tools compared to conventional banking and its restricted scope of investment have led to disadvantaged situations. Sometimes, due to their beliefs, they have customers who will never turn to their conventional banking competitors, making them subjects of monopolistic competition. This has resulted in them offering lower profit shares to depositors and providing financing at higher profit rates. This situation is clearly observed in the comparative analysis of banking data in Turkey.

The purpose of this research paper is to undertake a thorough comparison of islamic and conventional banking in Türkiye with respect to their approaches to rationality and earning. This paper will dissect the philosophical underpinnings, operational strategies, and financial outcomes associated with each system. Through this analysis, we aim to illuminate the strengths and weaknesses of each model and offer insights that could shape the future of ethical banking.

Method

This study employs a methodological approach to compare the profit ratios of Islamic banks and the interest rates on deposits of conventional banksbetween the years 2012-2022. It interprets individuals' perceptions of rationality in this context.

III. Rationality in Conventional and Islamic Banking

Rationality has long been a fundamental concept in economic theory, particularly in the context of individual benefit maximization. Classical economic theories, rooted in the neoclassical doctrine, posit that individuals act as rational agents who strive to maximize their expected subjective utility. This behavior is encapsulated in the mainstream theory of rational choice, which suggests that individuals make decisions based on a rational strategy of utility maximization (Horodecka, & Vozna, 2020: 139).

The concept of rationality in economics is often associated with optimization and efficiency. Economic rationality implies that individuals make choices that align with their personal interests, aiming to achieve the highest level of satisfaction or benefit from their actions. This notion is central to the resourceful, evaluative, maximizing model (REMM), which contrasts with the economic model of human behavior that focuses solely on monetary gains (Wartiovaara, 2011: 641).

Rationality within the realm of conventional banking is often encapsulated by the pursuit of profit maximization. This core

objective drives banks to make decisions that align with their financial interests, ensuring the maximization of shareholder wealth. The definition of rationality in this context is closely tied to the bank's ability to navigate the complexities of financial markets, regulatory demands, and the competitive landscape to achieve optimal financial outcomes (Beck, Demirgüç-Kunt, & Merrouche, 2013: 435, 436).

The profit maximization focus in conventional banking is not merely about short-term gains but also encompasses long-term sustainability and growth. Banks employ a variety of strategies to enhance their profitability, such as optimizing their capital structure, diversifying their income streams, and investing in technology to improve operational efficiency. These strategies are designed to increase the bank's return on equity, a key metric for assessing a bank's financial performance and rational decision-making (Bitar, Hassan, Pukthuanthong, & Walker, 2018: 228, 233). An in-depth examination of risk management strategies reveals that conventional banks deploy a comprehensive set of tools and techniques to manage and mitigate risks. These include credit risk modeling, market risk hedging, operational risk controls, and liquidity management. By employing these strategies, banks aim to protect their capital base, maintain financial stability, and ensure compliance with regulatory standards.

The concept of rationality in Islamic banking is deeply rooted in the principles of Shariah law, which emphasizes ethical financial practices and social justice. Unlike conventional banking, where rationality is often equated with profit maximization, Islamic banking considers rationality as a broader concept that includes ethical considerations, social welfare, and adherence to Islamic teachings. This unique approach to rationality ensures that financial transactions contribute positively to society and do not involve exploitative practices (Kustin, 2017: 4). Profit sharing and risk sharing are central to the operational framework of Islamic banking. These principles encourage a collaborative approach to finance, where both the bank and its clients share the profits and losses of

investments. This system promotes transparency and mutual trust, as all parties have a vested interest in the success of the financial venture. Moreover, it aligns the bank's objectives with those of its clients and the wider community, fostering a sense of collective responsibility and ethical investment (Adewale & Archer, 2019: 1). An analysis of ethical considerations and social responsibility in Islamic banking reveals a commitment to values that extend beyond financial transactions. Islamic banks are expected to engage in socially responsible investments, avoid businesses that are harmful to society or the environment, and support charitable activities. This ethical framework ensures that Islamic banks contribute to the overall well-being of the community and uphold the principles of fairness, justice, and compassion that are central to Islam (El Melki & Ben Salah Saidi, 2023: 81).

IV. Earning in Conventional and Islamic Banking

Earning methods in conventional banking are predominantly centered around the interest income generated from a variety of financial products and services. This interest income forms the backbone of a conventional bank's revenue stream. Banks charge interest on loans, mortgages, and other credit facilities they provide to customers, and this interest is typically set at a higher rate than the interest paid out on customer deposits. The differential between these rates, known as the net interest margin, is a key profitability measure for banks (Beck, Demirgüç-Kunt, & Merrouche, 2013: 436). An examination of interest-based financial products and services shows that conventional banks offer a diverse portfolio, including but not limited to personal loans, mortgages, credit cards, and business financing solutions. These products are designed to meet the credit needs of individuals and businesses while ensuring a consistent return for the bank through interest payments.

Earning methods in Islamic banking are founded on the principles of Shariah law, which prohibits the payment or receipt of interest (Riba). Instead, Islamic banks earn through Shariah-compliant methods such as trade-based financing, leasing, and

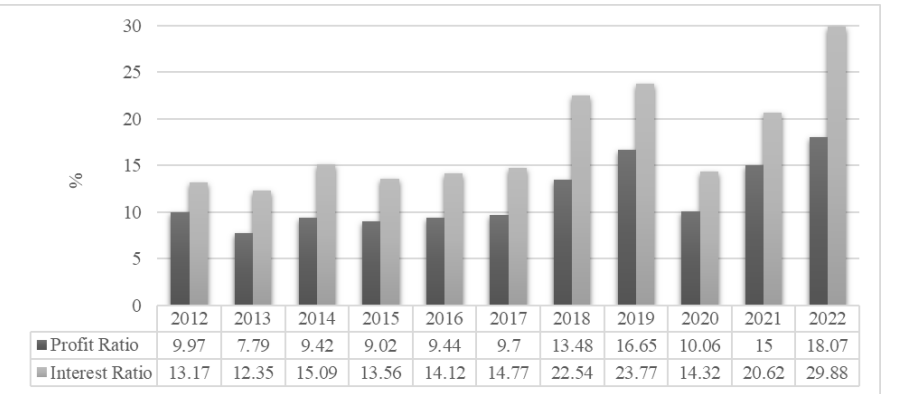
partnership contracts. These methods align with the ethical standards of Islamic finance and involve the sharing of profits and risks between the bank and its clients (Hanif, 2011: 169). The profit and loss sharing system is a cornerstone of Islamic banking, embodying the principles of equity and justice. This system is operationalized through contracts like Mudarabah and Musharakah. In Mudarabah, the bank provides capital to an entrepreneur who manages the business, and profits are shared according to pre-agreed ratios, while losses are borne by the bank unless due to negligence or violation of contract terms. Musharakah involves a partnership where all partners contribute capital and share in the profits and losses in proportion to their investment (Khan, 2012: 23). An examination of Islamic financial products and services offered for earning purposes reveals a diverse portfolio that includes Sukuk (Islamic bonds), Takaful (Islamic insurance), and various investment accounts. These products are designed to generate earnings for the bank while remaining compliant with Islamic law, which mandates that all transactions be backed by tangible assets and that risk is shared equitably between the bank and its clients. This adherence to Islamic principles ensures that the financial activities are not only ethical but also contribute to the economic well-being of all parties involved (Vatandaş, 2021: 72).

V. Comparison of Rationality in Conventional and Islamic Banking

The rationality principles in conventional and Islamic banking systems reflect their underlying economic philosophies and operational frameworks. While both systems aim to achieve financial stability and economic growth, their approaches to rationality are guided by distinct principles that shape their financial products and services. An analysis of similarities reveals that both conventional and Islamic banking systems strive to offer competitive financial solutions, maintain customer satisfaction, and ensure the sustainability of their operations. Both systems employ rigorous risk assessment and management strategies to safeguard their interests

and those of their stakeholders (Hanif, 2011: 169). However, the differences in rationality principles are pronounced, stemming from the fundamental divergence in their ethical and operational mandates. Conventional banking is primarily driven by profit maximization and interest-based transactions, whereas Islamic banking adheres to Shariah law, emphasizing ethical investments, social justice, and the prohibition of interest (Riba). Islamic banking promotes risk-sharing through profit and loss sharing arrangements, contrasting with the risk-transfer mechanisms prevalent in conventional banking (Hanif, 2011: 172).

Graphic 1- The Comparison of Profit and Interest Rate on Deposits in Türkiye



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Profit Ratio	9.97	7.79	9.42	9.02	9.44	9.7	13.48	16.65	10.06	15	18.07
Interest Ratio	13.17	12.35	15.09	13.56	14.12	14.77	22.54	23.77	14.32	20.62	29.88

* Profit ratio and interest ratio on deposits are maximum annual rates.

Sources: Central Bank of the Republic of Türkiye (Electronic Data Delivery System), The Participation Banks Association of Türkiye (TKBB)

Graphic 1 displays a comparison of the annual profit rates from Islamic banks versus the interest rates on deposits from conventional banks in Türkiye over a period of eleven years, from 2012 to 2022. The data reveals the following trends. The profit rate started at 9.97% in 2012 and saw fluctuations over the years, with a notable increase to 18.07% in 2022. The interest rate began at

13.17% in 2012, with variations throughout the period, reaching a peak of 29.88% in 2022. Both types of banks experienced growth in rates, with conventional banks generally exhibiting higher rates compared to Islamic banks. The year 2022 marked the highest profit rate for Islamic banks at 18.07%, while conventional banks reached their peak at 29.88% in the same year. The data indicates a trend of increasing profitability for both Islamic and conventional banks, with conventional banks maintaining a higher interest rate throughout the observed period. It can be interpreted for rational preferences. Rationality in economics often involves maximizing one's utility, which is not solely defined by financial returns. If individuals derive utility from engaging in banking practices that align with their ethical beliefs, their preference for Islamic banking can be considered rational.

VI. Conclusion

Mainstream economic systems, where neoclassical theory predominantly serves as the fundamental determinant, argue that rationality is the preference for goods or services that provide the highest individual satisfaction in a tangible or perceptible manner. This activity, commonly referred to as the maximization of utility or profit, is measured in a mathematical sense and manifests as the selection of the highest quantity. To do otherwise is considered irrational behavior, and irrational choices may stem from incomplete information, social pressure, expectations, over/under reactions, or other factors. Such preferences of individuals constitute the subject of behavioral economics and encompass a significant portion of the economy even in the modern world. If irrational choices, which are the subject of behavioral economics or finance, involve opting for less beneficial options for various reasons instead of maximizing utility as accepted in mainstream economics, then Islamic banks form the subject matter of behavioral economics in this regard. However, if the maximization of utility includes people's spiritual or psychological benefits, then individuals will place Islamic banking among their rational choices, regardless of the profit or financing

rates provided, as they derive maximum pleasure from choosing what is permissible. Thus, faithful individuals will not compare Islamic banks with conventional banks in terms of rationality and will define their rational choice in favor of Islamic banking. Nevertheless, this does not preclude the specific investigation and evaluation of Islamic banking operations from the perspective of behavioral finance, nor does it hinder their comparison with conventional banks.

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CHAPTER II

Empirical Analysis of House Price Shocks: Nonlinear Unit Root Tests in Türkiye's NUTS 2 Regions

Mehmet ÖZCAN[1]

Introduction

The dynamics of the housing market are important for all macroeconomic systems. Housing, which is seen not only as a consumption but also as an investment instrument, can be affected by many social and economic factors that affect the expectations and economic decision-making processes of economic agents. In recent years, housing prices have been exposed to unpredictable and upward shocks due to the developments in the Turkish economy and the expectations created by heterodox economic approaches in

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The findings of this study were first presented at the 6th International New York Academic Research Congress on Humanities and Social Sciences, November 12-14, 2023, in Albany, New York, USA.

monetary policy. It should not be forgotten that the global financial crisis experienced in the United States economy in 2008 was triggered by housing valuations outside the economic logic. Understanding the dynamics of the housing market, which can cause a chain of problems even in a developed economy, is important for interpreting the future of the Turkish economy. In this context, the first objective of this study is to determine whether capital gains from housing have a stationary process in the Turkish economy by utilizing linear and nonlinear unit root tests. The second objective of the study is to find out whether a shock in housing prices, which is called the ripple effect, spreads to the surrounding regions and to understand whether the housing price stocks in some regions affect other regions.

In applied studies, it is important to understand whether house prices follow a stationary process, in other words, whether they have a stochastic trend or a deterministic trend, for several reasons. First, in order for empirical analyses on the housing market to yield trustable results, time series variables such as capital gains calculated from house prices should be stationary. Secondly, for co-integration, causality, and impulse response analyses, which are also frequently used in empirical analysis, time series variables representing the housing market, particularly house prices, should be stationary. Finally, unit root tests are also used to examine the Efficient Market hypothesis, which analyzes the market formation of an asset price. House prices are also asset prices and therefore the validity of the efficient market hypothesis should also be investigated in housing markets. According to the efficient market hypothesis, the price of an asset is formed using all information, news, and expectations in the relevant market. This means that all economic agents in a market have access to the same information at the same time and make their investment decisions accordingly. In a market where all information and news reach all investors symmetrically, asset prices are formed randomly. Thus, no investor can earn more than the average. In his study, Fama (1970) categorized the Efficient Market hypothesis into three groups. These

are weak form efficiency, semi-strong efficiency and strong efficiency. Among these three definitions of efficiency, the weak form of efficiency is also known as the random walk hypothesis. According to the weak form efficiency hypothesis, since the current price of an asset contains all past information, it is very difficult to make inferences about future price values based on past values of the price of that asset. Thus, it becomes virtually impossible to earn much above-average returns on the asset. Weak-form efficiency hypothesis can be analyzed by unit root tests. At this point, whether the housing market satisfies the weak form efficiency hypothesis will be examined by testing for unit roots in the capital gains from housing purchases. If p_t is the average or index value of house prices at the current time, the capital gains rate y_t in the relevant housing market can be expressed as follows:

$$y_t = \ln(p_t) - \ln(p_{t-1}) \quad (1)$$

Another important point about the housing market is to understand whether a shock that manifests itself in the form of an increase or decrease in house prices in a particular region spreads to the surrounding regions. According to common economic wisdom, house prices in different regions do not move together. Housing prices are often influenced by the unique supply and demand dynamics of the regional housing market. These dynamics may be driven by various sociological and economic factors. These factors, in turn, vary from region to region. However, many empirical studies have found that house prices have spillover effects (Canarella et al., 2012). According to Meen (1999), there are many reasons for the emergence of the spillover effect, also known as the ripple effect, in house prices. The most important of these is migration. Migration is an exogenous shock for a regional economy. Such an exogenous intervention can disrupt the long-standing price equilibrium in the local housing market. Once the housing price equilibrium in the first regions and/or metropolitan areas to experience migration is disrupted, individuals who are unable to meet the housing demand in those regions and metropolitan areas may turn to housing in neighboring regions and cities, thereby increasing the demand for

housing in those regions and cities and thus disrupting the price equilibrium in the neighboring regions as well. Türkiye has been subjected to an intense migration flow in recent years. It would not be misleading to expect migration to change the pricing equilibrium in the local and national housing market in Türkiye and for this pricing shock to propagate within Türkiye. Empirically, according to Meen (1999), the ripple effect is the stationarity of the ratio (logarithmic difference) of prices in a local housing market to national prices. Accordingly, the analysis of the ripple effect for each region according to the NUTS 2 classification will be carried out with the series defined as follows:

$$r_t^i = \ln\left(p_t^i\right) - \ln(p_t^{TR}) \qquad (2)$$

Where p_t^i is the house price index value in the i. region and p_t^{TR} is the house price index value calculated for Türkiye as a whole.

Method

Linear and nonlinear unit root tests will be utilized in this study. The study that initiated the unit root literature in time series econometrics is the Dickey-Fuller test. The method proposed by Dickey and Fuller (1979) is based on a model representing a first order autoregressive process. The main criticism of the Dickey-Fuller test is that the model does not include autocorrelation. Therefore, the Dickey-Fuller test was improved by adding lagged values of the time series variable to the model and re-presented as the Augmented Dickey and Fuller (1981) (Augmented Dickey-Fuller, ADF) test. The most comprehensive ADF model for the variables to be analyzed in this study, including the constant and trend components, is as follows:

$$\Delta y_t = \phi_0 + \phi_1 t + \rho y_{t-1} + \Sigma_{i=2}^{\mathrm{p}} \Delta y_{t-i+1} + u_t \qquad (3)$$

$$\Delta r_t = \phi_0 + \phi_1 t + \rho r_{t-1} + \Sigma_{i=2}^{\mathrm{p}} \Delta r_{t-i+1} + e_t \qquad (4)$$

In Equations (3) and (4), p is the appropriate number of lags, u_t and e_t are the error terms that meet the standard assumptions. In

these models, whether the variables have a unit root process is determined by testing the alternative hypothesis $H_1: \rho < 0$ against the null hypothesis $H_0: \rho = 0$. The appropriate lag p is determined by various information criteria such as Akaike and Bayesian.

The ADF test is a linear unit root test. However, in economic life, structural shocks may occur that unexpectedly deviate macroeconomic aggregates from their long-run trends. For example, economic crises and natural disasters such as the pandemic experienced in 2020 are important shocks that disrupt the general economic functioning. These shocks are called structural breaks in economic time series. The concept of structural break was introduced to the unit root literature by Perron (1989). Following this study, the structural break literature has expanded rapidly, and many methods have been introduced. Until Leybourne et al. (1998) (LNV), all unit root tests with structural breaks were developed for cases where the structural break occurred suddenly, changing the path of the time series drastically. However, the LNV test came up with a new unit root test that models both sudden structural breaks and relatively softer structural breaks that have their effects spread over time. In this method, structural breaks are modeled with logistic functions instead of dummy variables. LNV yields three models, Model A, Model B and Model C, which can be expressed as follows:

$$y_t = \delta_1 + \delta_2 S_t(\gamma, \tau) + \omega_t \quad (5)$$

$$y_t = \delta_1 + \varphi_1 t + \delta_2 S_t(\gamma, \tau) + \omega_t \quad (6)$$

$$y_t = \delta_1 + \varphi_1 t + \delta_2 S_t(\gamma, \tau) + \varphi_2 t S_t(\gamma, \tau) + \omega_t \quad (7)$$

In Equations (5), (6) and (7), ω_t is the error term and $S_t(\gamma, \tau)$ is a logistic function denoted as follows:

$$S_t(\gamma, \tau) = (1 + \exp\{-\gamma[t - \tau T]\})^{-1} \quad (8)$$

Here τ is the time at which the structural change occurs and γ is the parameter indicating the rate of structural change, which is greater than zero. As γ takes larger values, the soft character of the structural change changes towards a hard fracture. LNV has two stages. In the first stage, the parameter estimates of the regression

models shown in Equations (5), (6) and (7) are made and the residuals are obtained. In the second stage, these residual series are modeled with the models expressed in the ADF unit root test and the unit root test is performed with the help of a test statistic defined by ADF. However, it should be noted that although LNV utilizes the ADF, the two unit root tests have test statistics with different distributions. The model to be estimated in the second stage is as follows:

$$\Delta\widehat{\omega}_t = \rho\widehat{\omega}_{t-1} + \sum_{i=1}^{k} \delta_i \Delta\widehat{\omega}_{t-i} + \varphi_t \qquad (9)$$

In Equation (9), k is the number of appropriate lags and φ_t is the standard random error term. The t statistic calculated for $\hat{\rho}$ in Equation (9) is considered as the unit root test statistic. Depending on the type of model from which the residual series are obtained (Equation (5), (6) or (7)), the LNV test statistics are denoted as s_α, $s_{\alpha(\beta)}$ and $s_{\alpha\beta}$, respectively, and these test statistics test the following hypotheses:

$$\begin{aligned} &H_0: y_t = \mu_t,\ \ \mu_t = \mu_{t-1} + \varepsilon_t \\ &H_1: y_t \text{ stationary with (5), (6), (7) .} \end{aligned} \qquad (10)$$

The third unit root test to be used in this study is Caner and Hansen (2001) (CH). Caner and Hansen (2001) replace the autoregressive model proposed in the ADF test with a threshold autoregressive model:

$$\Delta y_t = \Gamma_t\left(\rho_1 y_{t-1} + \sum_{i=1}^{k} \phi_{1i}\Delta y_{t-i}\right) + (1-\Gamma_t)\left(\rho_2 y_{t-1} + \sum_{i=1}^{k} \phi_{2i}\Delta y_{t-i}\right.$$

In Equation (11), Γ_t is an indicator function that takes the value 0 when $\Delta y_{t-d} < \tau$ and 1 when $\Delta y_{t-d} \geq \tau$. k is the number of lags chosen and d is the lag parameter in threshold autoregressive models. In the CH Unit root test, two Wald statistics are recommended to test the null hypothesis $H_0: \rho_1 = \rho_2 = 0$ and 4 alternative hypotheses. In order to avoid further overcrowding, only $H_{10}: \rho_1 \neq 0$ and/or $\rho_2 \neq 0$ and $H_{20}: \rho_1 < 0\ and\ \rho_2 < 0$ and the R_{2T} and R_{1T} statistics that test these hypotheses will be considered. The R_{2T} and R_{1T} statistics can be expressed as follows:

$$R_{2T} = t_1^2 + t_2^2 \quad (12)$$

$$R_{1T} = t_1^2 1_{\{\hat{\rho}_1<0\}} + t_2^2 1_{\{\hat{\rho}_2<0\}} \quad (13)$$

In Equations (12) and (13), t_1 and t_2 are the t statistic values calculated for the parameter estimates ρ_1 and ρ_2 in Equation (11), respectively.

Findings

ADF, LNV and CH unit root tests are applied to the capital gains y_t and ripple effect r_t variables constructed on the basis of housing prices in Türkiye and the results are presented in Table 1 and Table 2. Data are collected from the Electronic Data Distribution System of the Central Bank of the Republic of Türkiye for Türkiye as a whole and for 26 regions at NUTS 2 level. The data cover the period between May 2014 and August 2022 and consist of a total of 100 observations.

Table 1. Unit Root Test Results for Capital Gains Variable y_t

Bölgeler	ADF	LNV s_α	LNV $s_{\alpha(\beta)}$	LNV $s_{\alpha\beta}$	CH R_1^T	CH R_2^T
Türkiye	-2.2005	-2.5847	-2.5906	-3.0036	5.5969	8.5746
İstanbul	-2.2318	-2.0010	-1.9822	-2.2846	**23.1869**	**23.1869**
Ankara	-2.1264	-3.1073	-3.2695	-3.6405	7.1599	7.1599
İzmir	-1.6514	**-5.5452**	-3.6405	-3.8041	7.1106	9.4894
Edirne, Kırklareli, Tekirdağ	-1.4972	**-6.4886**	**-6.4924**	-4.6903	14.8272	15.0133
Balıkesir, Çanakkale	-3.1248	**-4.9813**	**-5.1200**	**-5.7910**	11.2922	14.2875
Aydın, Denizli, Muğla	-3.1024	**-4.5735**	**-4.7970**	**-5.0612**	13.8081	**18.9372**
Afyonkarahisar, Kütahya, Manisa, Uşak	-1.5938	**-5.5848**	**-5.6915**	**-5.9844**	8.7501	13.5428
Bursa, Eskişehir, Bilecik	-1.5039	**-5.4603**	-3.5691	-3.7760	14.0725	15.4138
Bolu, Kocaeli, Sakarya, Yalova, Düzce	-0.8781	-3.6426	-3.6278	-3.9847	11.9623	12.7933
Konya, Karaman	-1.6054	**-6.1726**	**-6.2965**	**-6.6619**	10.9315	15.3270

Antalya, Burdur, Isparta	-2.4162	**-4.9300**	**-5.2712**	-3.7685	13.9483	**18.0193**
Adana, Mersin	-2.0885	**-4.5934**	-4.6036	**-5.5151**	10.8768	10.8768
Hatay, Kahramanmaraş, Osmaniye	-2.0834	**-5.7485**	-3.6647	-4.3969	7.3132	10.3626
Nevşehir, Niğde, Aksaray, Kırıkkale, Kırşehir	-3.2573	**-6.9554**	**-7.4568**	**-7.5763**	6.0255	**34.0078**
Kayseri, Sivas, Yozgat	-2.7211	**-7.4514**	**-7.6062**	**-7.7689**	11.3114	**20.0242**
Zonguldak, Bartın, Karabük	-1.9195	**-7.3875**	**-7.4822**	**-7.5089**	4.2653	4.7957
Çankırı, Kastamonu, Sinop	-3.3159	**-6.8859**	**-6.8546**	**-7.4699**	**21.5632**	**21.5632**
Samsun, Çorum, Amasya, Tokat	-1.9121	**-6.9996**	**-7.3729**	**-7.8671**	9.8785	10.6974
Artvin, Giresun, Gümüşhane, Ordu, Rize, Trabzon	-2.0520	**-7.6563**	**-7.6732**	**-7.8479**	3.0391	3.8270
Erzurum, Erzincan, Bayburt	-3.4546	**-6.6527**	**-7.0149**	**-7.4932**	8.7950	12.6708
Ağrı, Ardahan, Kars, Iğdır	-3.2608	**-6.8511**	**-7.1142**	**-6.9280**	9.3487	9.3672
Bingöl, Elâzığ, Malatya, Tunceli	-1.6762	**-7.8064**	**-8.1288**	**-8.1233**	12.6373	12.6373
Van, Bitlis, Hakkâri, Muş	-1.2201	**-7.7774**	**-8.1598**	**-8.0217**	11.226	11.2260
Kilis, Adıyaman, Gaziantep	-2.7914	**-5.9782**	**-5.8794**	**-6.0229**	4.8758	5.7286
Diyarbakır, Şanlıurfa	-2.1062	**-5.6685**	**-6.1346**	-4.4551	9.5544	11.4589
Batman, Mardin, Siirt, Şırnak	-2.4131	**-6.8172**	**-4.8258**	-4.8941	8.8188	11.6609

5% Critical Values: ADF (Constant+Trend)=-3.4558, LNV MA= -4.232, LNV MB= -4.771, LNV MC= -5.011, CH R1= 17.6231, CH R2= 17.8530. The results of the tests where the null hypothesis of no unit root can be rejected at the 5% significance level are in bold type. For all tests, the maximum lag is set as 10 and the appropriate lag is determined according to the Bayesian Information Criterion.

Table 2. Unit root test results for the ripple effect variable r_t

Bölgeler	ADF	LNV s_α	LNV $s_{\alpha(\beta)}$	LNV $s_{\alpha\beta}$	CH R_1^T	CH R_2^T
İstanbul	-2.3627	-2.9712	-0.3873	**-5.1724**	**20.4910**	**22.7580**
Ankara	-1.4159	-3.1525	-3.0892	-2.6499	**27.4257**	**27.8177**
İzmir	-0.7469	-2.5874	-2.8899	-2.7105	9.0518	9.0518
Edirne, Kırklareli, Tekirdağ	-0.4960	-1.1739	-3.5475	-3.0129	17.4301	17.4301
Balıkesir, Çanakkale	-1.3349	-3.6001	-3.9772	**-6.4104**	7.7950	7.7950
Aydın, Denizli, Muğla	-2.1379	-3.1374	**-6.0613**	**-6.0775**	4.5008	8.4710
Afyonkarahisar, Kütahya, Manisa, Uşak	-0.4691	-2.6506	-2.7000	-2.7193	6.3847	6.3847
Bursa, Eskişehir, Bilecik	-0.6722	-0.9616	-2.9081	-2.8555	16.5204	16.5204
Bolu, Kocaeli, Sakarya, Yalova, Düzce	-1.1921	-1.7746	-4.6391	-3.7730	**17.6911**	17.7588
Konya, Karaman	-2.5890	-2.6948	-2.7363	**-5.0201**	16.3549	16.3569
Antalya, Burdur, Isparta	0.2891	-3.2373	-3.6695	-2.6351	0.0357	**27.4619**
Adana, Mersin	-1.3861	-1.3948	-2.4492	-3.5953	15.6206	17.8013
Hatay, Kahramanmaraş, Osmaniye	-2.2238	-0.4961	-2.4054	**-5.7342**	17.1692	17.1692
Nevşehir, Niğde, Aksaray, Kırıkkale, Kırşehir	-1.9089	-0.7585	-4.3881	-4.9415	12.7604	12.7604
Kayseri, Sivas, Yozgat	-1.5173	-2.9236	**-4.9406**	**-5.3213**	5.9627	5.9627
Zonguldak, Bartın, Karabük	-1.4176	-2.4957	-3.2871	-4.6619	14.4578	14.4578
Çankırı, Kastamonu, Sinop	-1.0505	-3.0133	-3.0554	-3.0601	9.2207	9.2207
Samsun, Çorum, Amasya, Tokat	-1.5647	-1.8958	-4.3217	-4.9952	12.0565	14.4491

Artvin, Giresun, Gümüşhane, Ordu, Rize, Trabzon	-0.7813	-3.1976	-3.4968	-3.5314	2.4625	9.5933
Erzurum, Erzincan, Bayburt	-0.6792	-3.2184	-3.0671	-3.0682	3.7934	4.5138
Ağrı, Ardahan, Kars, Iğdır	-1.9218	-0.2236	-3.3330	-4.5752	15.8262	17.6727
Bingöl, Elâzığ, Malatya, Tunceli	0.2787	-1.7918	-2.5788	-4.8825	14.4346	14.4346
Van, Bitlis, Hakkâri, Muş	-1.251	-2.0122	-3.4467	**-5.4729**	13.3251	13.3251
Kilis, Adıyaman, Gaziantep	-2.1788	-1.3173	-0.3981	-0.7518	16.2890	16.2890
Diyarbakır, Şanlıurfa	-2.113	-1.9909	-3.0019	-2.8107	**23.4535**	**23.4535**
Batman, Mardin, Siirt, Şırnak	-1.5162	-1.9078	-4.0361	-4.5343	**22.6316**	**22.6316**

5% Critical Values: ADF (Constant+Trend)=-3.4558, LNV MA= -4.232, LNV MB= -4.771, LNV MC= -5.011, CH R1= 17.6231, CH R2= 17.8530. The results of the tests where the null hypothesis of no unit root can be rejected at the 5% significance level are in bold type. For all tests, the maximum lag is set as 10 and the appropriate lag is determined according to the Bayesian Information Criterion.

In addition to summarizing the results in Table 1 and Table 2, the results of some selected test statistics can also be displayed on maps divided into regions at NUTS 2 level. Map representation may lead to a different perspective in the interpretation of the results.

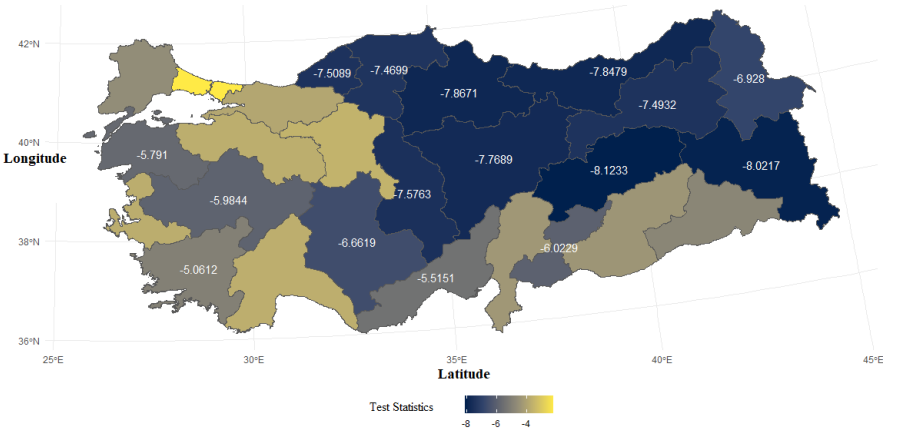

Figure 1. Map representation of LNV $s_{\alpha\beta}$ test results for capital gains variable y_t

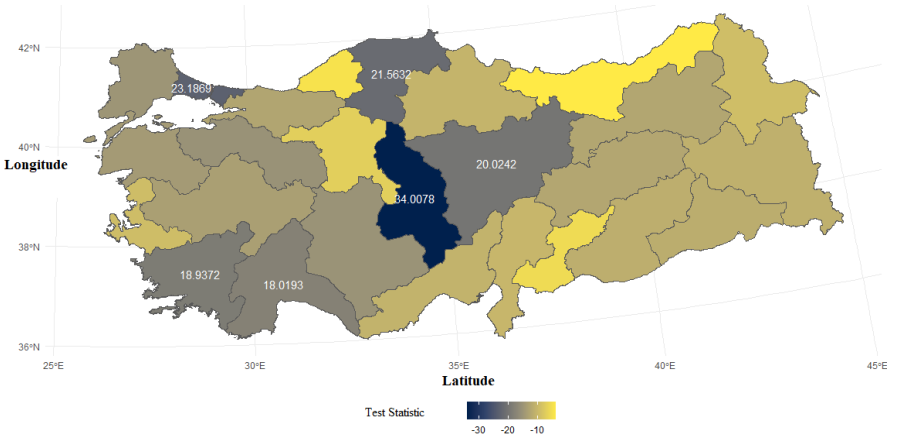

Figure 2. Map representation of CH R_2^T test results for capital gains variable y_t

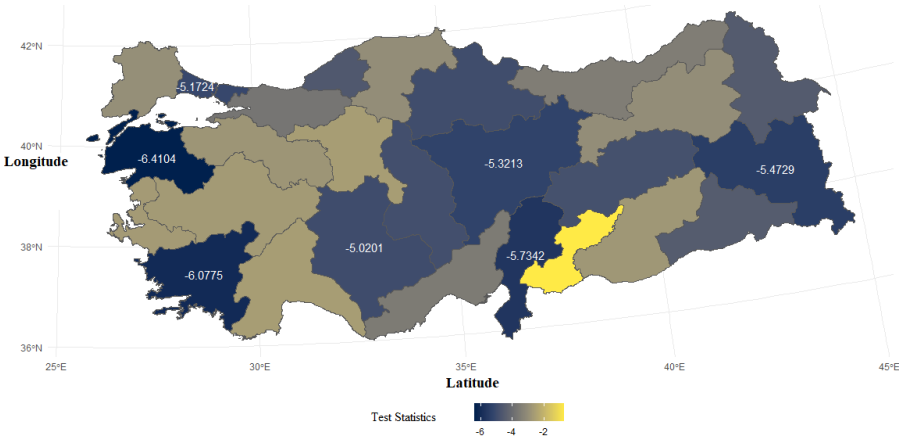

Figure 3. Map representation of LNV $s_{\alpha\beta}$ test results for the ripple effect variable r_t

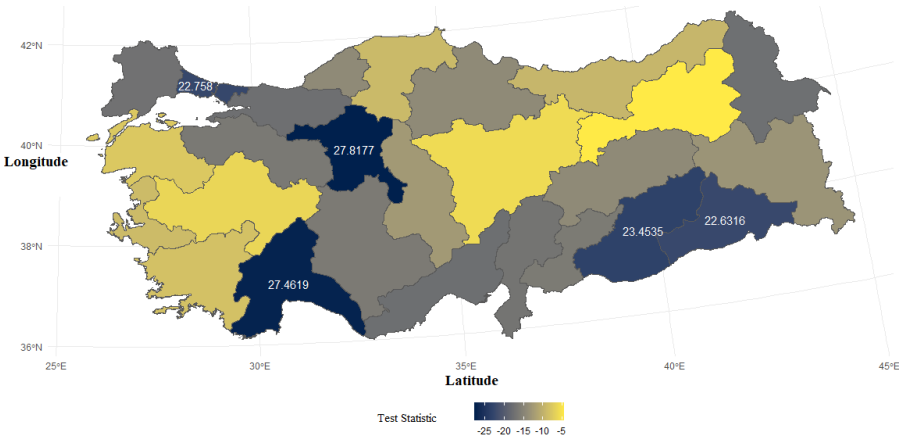

Figure 4. Map representation of CH R_2^T test results for the ripple effect variable r_t

Discussion And Conclusion

In the analysis where weak form efficiency is tested and the findings are summarized in Table 1, all unit root tests confirm that the housing market in Türkiye is weakly efficient. However, when analyzed at the regional level, LNV tests that take into account the

structural break dynamics (at least two of them) show that the housing market in metropolitan areas such as Istanbul, Ankara and Izmir, as well as Bursa-Eskişehir-Bilecik, Bolu-Kocaeli-Sakarya-Yalova-Düzce, Hatay-Kahramanmaraş-Osmaniye regions are weakly efficient, but pricing in other regions is realized in an inefficient market environment. Therefore, housing investors in regions other than the above-mentioned regions may take advantage of the inefficient market to earn above-average incomes. According to the findings of Caner and Hansen (2001), who conducted a unit root test based on nonlinear regime-switching dynamics, housing markets are weakly inefficient in Istanbul, Aydın-Denizli-Muğla, Antalya-Burdur-Isparta, Nevşehir-Niğde-Aksaray-Kırıkkale-Kırşehir, Kayseri-Sivas-Yozgat, Çankırı-Kastamonu-Sinop, while housing markets are efficient in other regions. Accordingly, it is possible for real estate investors to earn above-average returns in the regions mentioned in the previous sentence.

In the analyses for the ripple or spillover effect, the linear ADF test finds support for the absence of a ripple effect in housing prices in any region. The LNV nonlinear unit root test with structural breaks finds a spillover effect in house prices in Istanbul, Balıkesir-Çanakkale, Aydın-Denizli-Muğla, Konya-Karaman, Hatay-Kahramanmaraş-Osmaniye, Kayseri-Sivas-Yozgat and Van-Bitlis-Hakkari-Muş regions. In the other nonlinear unit root test, Caner and Hansen (2001) found a ripple effect in house prices in Istanbul, Ankara, Antalya-Burdur-Isparta, Diyarbakır-Şanlıurfa and Batman-Mardin-Siirt-Şırnak regions. In particular, the findings of Caner and Hansen (2001) point directly to the cities bordering Syria, metropolises and Antalya and its surroundings, which host a large number of guests from northern countries, which can be interpreted as a contribution of the migration factor to the spillover effect in house prices.

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CHAPTER III

From Bretton Woods To The New Global Financial System

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Introduction

> *The gold standard had been on the verge of death for a long time, but few mourned when President Richard Nixon closed the "gold window" on 15 August 1971, allowing the dollar to be exchanged for gold in certain limited circumstances, thus eliminating the last vestige of the standard. Since then, the centuries-old link between money and precious metals has been severed.*
>
> *Pala, 2019, The Ascent of Money-A Financial History of the World s.52*

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The international monetary system is a set of rules, institutions, agreements, and practices that regulate the existing exchange rate regimes and payment relations between countries (Seyidoğlu, 2016). Theoretically, the international reserve currency should first be stable. Secondly, its supply should be flexible enough to allow timely adjustments to changing demand. Third, such adjustments should be independent of the economic conditions and interests of any country (Xiaochuan, 2009). The existing international monetary system, and its functioning (e.g. international liquidity, exchange rate and capital flow regimes, adjustment of external imbalances) adapts to the different economic conditions and policy preferences of each country (Dorrucci & McKay, 2011). The international monetary system has changed over time depending on the changes in international trade and finance and political conjunctures and has shaped the world economy and continues to do so. If we analyze this system from a periodical perspective, we can see that it has gone through five phases in total, and today, there are thoughts that the sixth one is at the door. However, the key to understanding the future is to know the past thoroughly, and statements can be made about what kind of system will be adopted today and in the future based on the experiences and developments in the past. When we first look at this issue, even if we think that the changes will only concern the states, it should not be forgotten that they have social and individual consequences. Because this system is universal, it has the power to radically affect states, households, and all economic units. It is one of the most important challenges of the 21st century not to be caught unprepared for the radical changes that may occur in the international monetary system to follow the developments closely and to adapt to the changes that will emerge immediately (Akdoğan, 2020).

The first part of the study explains the emergence of the gold standard system, how it was implemented, and its collapse. The second part deals with the chaotic period between World War I and World War II. The third part deals with the emergence and collapse of the Bretton Woods System. In the fourth part, it is explained how

the Bretton Woods system, which collapsed in 1971, has continued until today. This part is very important in the study. In 1971, the Bretton Woods System collapsed when the US abolished the convertibility requirement and the system, which had been in existence for 52 years, started to crack within the financial system. Adam Smith likened the proper functioning of the global financial system to a revolving wheel. With shocks such as Covid-19, the rupture of the supply chain, the Russian-Ukrainian War, and the energy crisis, the wheels are now having difficulty turning in the economy, which is the cornerstone of countries. In the current financial global financial system, signs of change in the rules that continue from the Bretton Woods system have begun. It is expected that a new financial system will emerge. Finally, the study is completed with the conclusion section.

Gold Standard System

Since the earliest ages of history, mankind has used various goods, precious metals, or other instruments as money to realize their exchanges. However, the first regularly applied monetary system is the gold standard (Seyidoğlu, 2016). The system of the gold monetary standard is as follows; each country defined the value of its money with a certain amount of gold and a fixed exchange rate was established between currencies depending on the gold content. Due to Britain's dominance in global trade and the soundness of its financial institutions, London naturally became the center of the international monetary system in system. In this system, if a country ran a balance of payments deficit, gold would flow out of that country, thereby reducing the money supply. This led to a fall in prices, which in turn led to an increase in exports and a decrease in imports. When the country had a balance of payments surplus, the opposite was the case. Thus, the balance of payments was returning to balance. This cycle was used by David Hume in 1752 to oppose the mercantilist view of foreign trade. The basic cycle in the gold standard was that when gold inflows into the country, the money supply would increase and prices would rise, or vice versa. In other

words, in this system, the balance of payments was automatically balanced. Therefore, a foreign trade surplus cannot be sustained under the gold standard (Çağlar & Dışkaya, 2018). The conversion of gold into national currencies at the parity determined in the gold standard application is free in every country. This freedom ensures that the exchange rate contained in the parities (1 ounce of gold = 4.24 pounds, 1 ounce of gold = 20.67 dollars, and therefore 1 pound = 4.87 dollars) is valid in every country (Yalçınkaya & Özden, 2019).

The main argument used by the central bank, the key institution in the gold money system, to successfully carry out the operations it undertook was the discount rate, which would affect market interest rates. A rise in interest rates affected the economic order in two ways: Firstly, by making borrowing more expensive, it reduced investment expenditure and domestic demand. The reason was to increase competitiveness and stimulate exports by putting downward pressure on domestic prices. Secondly, it was a method of attracting hot money from abroad to improve the balance of payments and capital account. In addition, with the OMO in circulation at the CB, it directly affected the amount of money and the financial order (Bal, 2022).

The conditions necessary for the functioning of the gold currency system are as follows (Eser, 2022):

1. The value of the currency must be in gold.

2. Gold can be converted into money and money can be converted into gold at the determined rate.

3. The export and import of gold from the country is free.

When the First World War was about to start, banks wanted to exchange their securities. This was a serious burden on the Central Banks. Thus, gold inflows to lending/receiving countries started and the reserves of England and Germany started to increase. To finance war expenditures in case of war, countries such as Germany, France, and Russia stopped the convertibility of their currencies into gold

banned the export of gold, and took measures against the demands of the public. The UK, which was legally within the system, de facto left the system since it was centralized. This system came to an end during the First World War (Yaman, 2003).

The Chaotic Period Between World War I and World War II

Between the First and Second World Wars, developed countries aimed to prevent economic growth, full employment, and protectionism after the war due to the economic burdens of the 1929 depression and wars. Leading the world countries, the USA came to the forefront in the establishment of the monetary system (Güder & Çetin, 2021). The chaotic period between World War I and World War II was one of the darkest periods in the world. The end of the First World War and the severe economic and social problems brought about by the war had collapsed like a black cloud of uncertainty in the world order. Countries started to take steps to correct the deteriorating economy and to gain a competitive advantage in international trade. For this reason, they have made attempts to increase their exports. The countries' desire to increase their exports led to currency wars. At the end of the First World War, countries endeavored to return to the gold standard. Firstly, the USA, which had lower inflation, returned to the gold standard by lifting export restrictions. In 1925, the UK and Switzerland, France, Scandinavian countries also returned to the gold standard system. However, by 1928, it was realized that the international gold standard was unsustainable. After the First World War, the major countries endeavored to restore economic equilibrium, pursuing a policy of sterilization of gold, which led to the disruption of the automatic equalization mechanism of the gold standard. This was a triggering event for the Economic Depression of 1929. In a short period, the economic depression started in the USA and affected the whole world. The rise in capital markets negatively affected production and employment. The economic shock, which showed more serious effects in America and Europe, deeply shook the

economies of the whole world and caused the collapse of the gold standard.

Between the First and Second World Wars, developed countries aimed to prevent economic growth, full employment, and protectionism after the war due to the economic burdens of the 1929 depression and wars. Leading the world countries, the USA came to the forefront in the establishment of the monetary system (Güder & Çetin, 2021). The chaotic period between World War I and World War II was one of the darkest periods in the world. The end of the First World War and the severe economic and social problems brought about by the war had collapsed like a black cloud of uncertainty in the world order. Countries started to take steps to correct the deteriorating economy and to gain a competitive advantage in international trade. For this reason, they have made attempts to increase their exports. The countries' desire to increase their exports led to currency wars. At the end of the First World War, countries endeavored to return to the gold standard. Firstly, the USA, which had lower inflation, returned to the gold standard by lifting export restrictions. In 1925, the UK and Switzerland, France, Scandinavian countries also returned to the gold standard system. However, by 1928, it was realized that the international gold standard was unsustainable. After the First World War, the major countries endeavored to restore economic equilibrium, pursuing a policy of sterilization of gold, which led to the disruption of the automatic equalization mechanism of the gold standard. This was a triggering event for the Economic Depression of 1929. In a short period, the economic depression started in the USA and affected the whole world. The rise in capital markets negatively affected production and employment. The economic shock, which showed more serious effects in America and Europe, deeply shook the economies of the whole world and caused the collapse of the gold standard.

The Emergence and Collapse of the Bretton Woods System (1944-1973)

First, let us look at the 20th century from a capitalist perspective. Why is the Bretton Woods system important? What would the economic system have been like without the Bretton Woods system? Perhaps the gold standard would have continued until today with its sluggish structure. Let's say the 19th century ended in 1914. The 20th century began politically in 1919 with the Treaty of Versailles. All the burden here fell on Germany. She could not recover economically. Because it is impossible to go back into the economic system. It will be necessary to take a step forward with the existing ones. Of course, before the world could overcome the devastating consequences of the end of the First World War, the outbreak of the Second World War after the 1929 Economic Depression was an additional burden. With the end of the gold standard, Britain separated the pound sterling from gold in 1931 and declared that its currency was valid in the Commonwealth, and the first curtain of Anglo-Saxon capitalism, the gold window, was closed. The second act, the Bretton Woods System, began (Kuruç, 2016).

While World War II was going on in the world, 44 countries, mainly the USA and the UK, came together and gathered at Bretton Woods in New Hampshire in 1944. Ideas were declared about what the economic plans of the countries would be after the end of the war (Polat & Akduru, 2021). The two architects of the agreement were Keynes from the British side and Harry Dexter White from the American side. Below is a photograph taken during the meetings of Keynes and White. Even though the system agreed upon as a result of the bilateral meeting seems to be the joint decision of the two thinkers, in fact, the decisions of the dominant country, the USA, have been decisive.

Photograph 1. Keynes and White's Meeting

Source: Kuruç, 2016.

In 1944, the Bretton Woods Agreement established a fixed exchange rate system based on gold at $35 per ounce. The agreement was the product of extensive negotiations by the US and British Treasuries. The aim of John Maynard Keynes and Harry Dexter White in the United States, who drafted the agreement, was to establish a set of rules to replace the international gold standard and to avoid the rigidity of this system (Meltzer, 1991). The Bretton Woods system was a formal international monetary system based on very transparent and predictable rules and a US dollar. The main feature of the system was that currencies were pegged to the US dollar and the US dollar represented a fixed amount of gold. The supply of international liquidity, then defined as gold and reserve currencies, was therefore constrained by the link to gold. External imbalances were thus adjusted (Dorrucci & McKay, 2011).

Established in 1944, the Bretton Woods System became fully operational in 1958. The system is divided into two periods 1994 and 1958. The equal importance of all currencies increased the dominance of the US dollar. After the devaluation, the reliability of the pound sterling decreased. At that time, only the US dollar was

the convertible currency. This situation caused the dollar to be used both as a reserve currency and in foreign trade. The international liquidity problem was tried to be solved by increasing the dollar supply. As of 1958, the system was fully implemented when the Western countries started to give a surplus in foreign trade. For this reason, the Bretton Woods System is divided into two as the period between 1944 and 1958 when the dollar was low and the period after 1958 when the dollar was high (Yüzbaşıoğulları, 2005).

Figure 1 shows the crises experienced by the dollar from the day the Bretton Woods System emerged until its collapse.

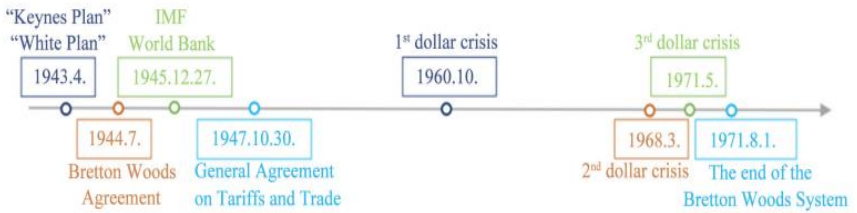

Figure 1. Crises of the Dollar until the Collapse of the Bretton Woods System

Source: Jin et al., 2018.

The Bretton Woods System continued to function flawlessly until the 1960s. In 1960, the Bretton Woods System experienced its first dollar crisis when the US ran a balance of payments deficit. There was no control over international liquidity. A significant part of the trade was carried out in dollars. The supply of dollars depended on the US policies and the balance of payments. The US deficits rose to very large levels and an "excess supply" of dollars was created. This situation was due to something called the "n-1 problem". If there are n countries, there is a general balance of payments equilibrium and it is only possible for countries to create a reserve surplus if other countries run deficits. That is to say, if (n-1) countries want to accumulate the money of the nth country as a reserve currency to trade, the nth country must run a balance of payments deficit. For this reason, the US had to run a balance of

payments deficit to supply the dollar to the world economy. This was a situation that the US was not happy with and held other countries responsible for this. Because other countries wanted to maintain their balance of payments surpluses. The US solution to this situation was for countries like Germany and Japan to revalue their currencies. Thus, US goods would be able to compete in world markets (Mumcu, 2007).

The "Triffin Paradox" was put forward by Triffin in 1960, explaining that the Bretton Woods system would no longer be effective after a certain point. Accordingly, countries with current account deficits whose currencies are reserve currencies print their currencies to cover their current account deficits and distribute them to the countries in the world that demand their currencies (Köse & Yılmaz). In the period when the Bretton Woods system was in effect since reserve money was printed against gold, there was a demand for the dollar, which was the reserve money, both from the USA and other countries of the world. According to Triffin, as long as the US, which had a current account deficit, continued to print dollars and distribute them to the world to cover this deficit, people would think that the gold in the US treasury vaults would not be enough to cover this amount of dollars and confidence in the dollar would decrease. The contradiction between printing dollars to close the current account deficit and maintaining confidence in the dollar was referred to as the Triffin Paradox. Triffin's prediction was realized in 1971 and the Bretton Woods system collapsed, leaving the dollar as worthless as other currencies. However, these developments did not lead to a decrease in the demand for the dollar (Eğilmez, 2022).

In Table 1, the events leading to the collapse of the Bretton Woods System are given in detail.

Table 1. Developments Leading to the Collapse of the Bretton Woods System

1958	Fourteen European countries have introduced currency convertibility for current account transactions.
1959	The Triffin Paradox has been proposed.
1961	Bade Merkez bankaları arasında birbirlerinin para birimini tutma ve borç verme anlaşması Establishment of the London Gold Pool.
1962	The beginning of France's persistent gold purchases from the United States. The introduction of clearing facilities to provide reciprocal lines of credit between central banks.
1963	Starting to work on the SDR
1965	Gaulle and d'Estaing proposed a return to the gold standard.
1967	The end of France's persistent gold purchases from the US. The United Kingdom devalued sterling from $2.80 to $2.40.
1968	Gold Pool interventions end; two-tier market for gold begins. SDR ammendense sent to IMF members for approval Exchange rate pressure on the French franc due to the domestic political crisis The currency crisis closed markets in France, Germany and the United Kingdom.
1969	SDR amendments entered into force. The French franc was devalued from .18 grams of gold to .16 grams per franc. The German mark fluctuates, and the German mark is revalued from $0.25 to $0.273.
1970	First SDR allocation
1971	Second SDR allocation The German mark and the Dutch guilder float. The United States suspends the convertibility of the dollar into gold for official transactions, suspends the use of swaps, imposes price control and a 10 per cent import surtax; all countries with major currencies, except France, start floating, impose

	exchange controls and make major interventions to buy dollars. In the Smithsonian Agreement, the G10 realigns exchange rates in a revised fixed exchange rate system; the US agrees to reduce the value of the dollar to $38.00 per ounce of gold; the average devaluation of the dollar against other currencies is 10 per cent; the convertibility of the dollar into gold has not been restored by the US and the US has not committed to backing the dollar.
1972	The pound sterling started to fluctuate against the dollar.
1973	The dollar depreciated to as low as $42.22 per ounce of gold, thus depreciating all major currencies. Following intensive intervention by the foreign exchange authorities, the fixed exchange rate system was converted into a generalised floating exchange rate, with gold revalued by 10% against the dollar.

Source: Garber, 1993.

The Bretton Woods System, which was established in 1994 and started to be fully implemented in 1958, collapsed in 1973 due to some problems it contained. The problems of the Bretton Woods System were as follows (Seyidoğlu, 2016):

1. External equalization problem: The Bretton Woods system did not have an adjustable exchange rates system like the gold standard or flexible exchange rate system and there was no automatic equalization mechanism. Since the fixed exchange rate system was applied in the system, there was no automatic equalization mechanism. In a fixed exchange rate system, the government's decision to devalue in a deficit country means the failure of the economic policies implemented. Therefore, governments first try to encourage exports and discourage imports. As a last resort, they want to resort to devaluation. In this case, the overvaluation of the national currency, causes it to move away from the market mechanism. In the Bretton Woods System, which led countries to continuous devaluation rather than revaluation, many countries did not want to devalue

even though their national currency was overvalued but instead tried to suppress the foreign trade deficit with much more costly and difficult measures in economic terms.

2. Liquidity Problem: Countries with a fixed exchange rate system can finance deficits in the short run when they run external deficits. In other words, when an external deficit emerges, the national currency starts to depreciate and the Central Bank wants to prevent this decline by selling foreign exchange. But for this, the Central Bank must have sufficient foreign exchange reserves. If the foreign exchange reserves of the country are not sufficient, countries come to a dead end. In the Bretton Woods system, countries were faced with a shortage of foreign exchange reserves, and this was the liquidity problem. In the Bretton Woods System, the main liquidity was foreign exchange and gold. Since the production of gold was not immediately possible, its supply could not be provided immediately, while the dollar was provided by the external deficits of the USA. In this situation, international liquidity was left to the monopoly of a country with unilateral control and created an unhealthy and insecure environment.

3. Confidence Problem: In the Bretton Woods System, where the fixed exchange rate system is in effect, when speculators doubt that the government will maintain a fixed parity, they free from that currency and turn to another currency. In this case, devaluation become inevitable. Devaluation is risk-free. Because when governments devalue when the exchange rate is crawling at the upper support point, speculators get what they expect. Of course, the absence of devaluation does not pose a risk for speculators.

4. Emission Gains: The fact that the US Dollar was the "reserve currency" in the Bretton Woods System was both an advantage and a disadvantage for the US, as well as being based on a fragile structure in general. The priority of the dollar in the system was due to the hegemony of the USA. After the war,

3/2 of the world's production was made by the USA. The benefit of the dollar being a reserve currency for the US is the emission gains that the US gains from being like the Central Bank of all countries. This situation was met with a reaction by all countries. While the system gave the US the privilege of importing and making foreign payments with the US national currency, other countries had to obtain foreign exchange by exporting goods and services first and finance their foreign payments (Sakal & Şahin, 2009).

Change in the International Monetary System: Post-Bretton Woods Era

Bergsten argues that "if a country's currency has acquired the status of a key currency, it should play an important role on the world political seçene". When the USA abolished the convertibility of the dollar in August 1971, the world monetary system was seriously shaken because this situation, which could have created a problem for another currency, did not create any problem for the dollar and continued to exist. Firstly, oil prices are measured in dollars, and many goods subject to world trade are bought and sold in dollars. The USA, which holds the hegemonic power that directs the international financial system with its reserve currency, the dollar, has a nuclear threat as well as a "financial threat" such as freezing foreign accounts in countries or removing the convertibility of the dollar to other currencies. The reason for the continued effectiveness of the dollar in the international monetary system is the lack of a reserve currency to substitute the dollar (Türkcan, 1980).

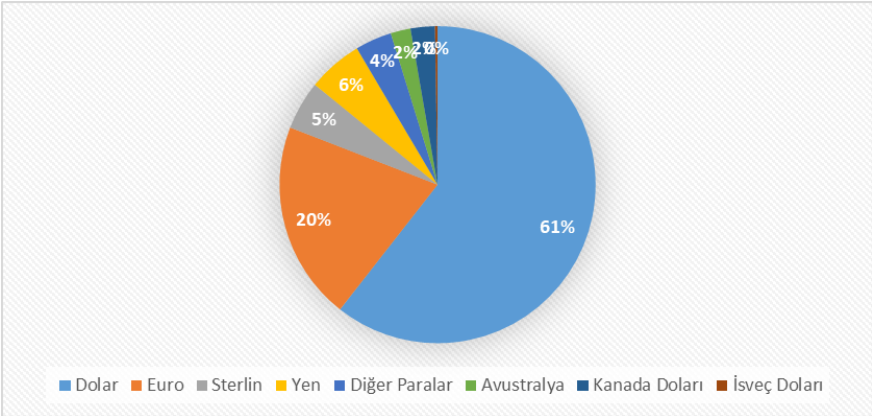

Figure 2. Breakdown of Total Foreign Exchange Reserves 2023, 1st Quarter

Source: IMF, 2023.

Figure 2 shows the distribution of total foreign exchange reserves. When we analyze the figure, we can see the dominant power of the US dollar. The US dollar accounts for 61 percent of total foreign exchange reserves and the Euro for 20 percent.

Since the US dollar is the currency that steers the international system, it has imposed its policies on developing countries. With the 2008 financial crisis, countries started to express their dissatisfaction with the uncontrolled global financial system and the monopoly power of the US in the financial system (Cengiz, 2022). They now think that the dominant structure of the dollar in the international financial structure of the current world order should be invalidated. Countries have become more willing not to trade in dollars in financial transactions. For example, China no longer wants to keep its dollar reserves of more than 3 trillion dollars by relying on US debts (Taskinsoy, 2023). In other words, China no longer wants to be the financier of the US economy.

According to Reuters, India made its first oil payment to the United Arab Emirates in Indian rupees (Reuters, 2023). At the BRICS summit held in South Africa, Iran, Argentina, Bangladesh,

and Saudi Arabia discussed to join BRICS as new member countries, while Russian President Vladimir Putin talked about a common currency (EURONEWS, 2023). The representative banknote of BRICS, which wants to break the hegemony of the dollar, is shown in Photograph 2.

Photograph 2. Representative Photograph of BRICS

Source: Para Analiz, 2023.

Among the countries that are looking for ways to eliminate the dollar, Russia and Indonesia want to take steps to move away from the dollar to protect their local currency in overseas trade payments (Erkan, 2023). Moreover, India, the second largest trading partner of Saudi Arabia, is in talks to abandon the US dollar in cross-border transactions and trade in their local currencies (Dsouza, 2023).

The introduction of a new BRICS currency could affect a total of 10 financial sectors in the US. These sectors include banking, trade, and tourism. The US financial sectors that may be affected by the creation of the new BRICS currency are as follows (Dsouza, 2023):

1. Global Financial System

2. International Trade and Investment
3. Energy and Goods Markets
4. Banking and Finance
5. Travel and Tourism
6. Capital Markets
7. Consumer Goods and Retail
8. Government and Politics
9. Technology and Financial Technologies (Fintech)
10. Production and Consumption

Conclusion

Nowadays, it is argued that the unipolar dollar-based system that directs the international monetary system should not be continued. In this respect, the study analyses the international macroeconomic process after the collapse of the Bretton Woods system and discusses the changes in the international macroeconomic structure. In light of all these, it is explained what kind of an international monetary system we need to ensure global financial stability in the world economic order and to facilitate the economic growth of the world. International trade and mobility are possible with a properly functioning global monetary system. Money, therefore, the great wheel of circulation, the great instrument of commerce, like all other instruments of trade (Smith; 2005: 235). The systems created under the conditions of World War II are no longer able to address a world of increasing economic globalization and a gradual reduction in the development gap between continents. Although the Bretton Woods System has come to an end, the US dollar continues to be the key currency (reserve currency, unit value, intervention instrument). The ever-increasing budget deficits of the USA have caused breaks in the great wheel representing the system. Despite the collapse of the Bretton Woods system, the US dollar is

still recognized as the unit value. Gaulle drew attention to this situation in 1965 with the following words:

> *‘‘He declared that Bretton Woods had become ‘abusive and dangerous’, complaining that the dollar’s central role in the system allowed the USA to ‘indebt itself freely to foreign countries’, thereby permitting it both to ‘expropriate’ foreign business and to export its military power. Dollars, de Gaulle said, were an unacceptable foundation for the international economy because they had no real value.’’ (Chivvis; 2006:712).*

This statement is one of the most important objections made before the collapse of the Bretton Woods System. The inability of the US dollar to remain stable and its fluctuations create instability in commodity values globally. In a world of increasing capital flows, trade mobility, and competition, a new and stronger functioning wheel is needed.

> *"Americans believe that every problem has a solution; the Chinese believe that every solution is a ticket to a new set of problems."*
>
> *Henry Kissinger*

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CHAPTER IV

The Impact Of Individuals' Attitudes Towards Social Media and Frequency of Use During the COVID-19 Pandemic Outbreak of e-Health Literacy and COVID-19 Preventive Health Behavior

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Introduction

The virus, which emerged in Wuhan, China in December 2019, spread all over the world very quickly and turned into a global epidemic in a short time. The World Health Organization (WHO) declared a global pandemic on March 11, 2020, due to the high rate of transmission of the epidemic and causing many deaths. The World

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Health Organization reported that as of March 4, 2021, a total of 114,428,211 people were infected in 223 countries and regions worldwide, and 2,543,755 people died of this disease (WHO, 2021). The COVID-19 virus can easily be transmitted from person to person by air or contact, also by contact with contaminated surfaces. Since there is no medical drug to prevent the spread of the epidemic or to eliminate it, precautions have been taken to prevent its spread. Many countries have primarily decided to temporarily stop their entry and exit into the country. In addition, travel within the country was temporarily suspended. In addition to these, they implemented several public measures such as curfews and social isolation that restricted the behavior of society, such as the closure of schools. With these measures, it is stated that it is important for individuals to access information about COVID-19 disease, causes, symptoms, and prevention of the disease in real-time easily and quickly in terms of the course of the epidemic. Among today's communication tools, one of the platforms where information can be spread easily and quickly and accessible is social media networks. Today, social media networks, which can access and share information on any subject in real time, easily and quickly, constitute an important source of communication and information for individuals to consult the knowledge about the COVID-19 outbreak.

Househ (2016) states that social media networks have become an important channel for promoting risk communication during crises and disasters. Valentini et al. (2017) indicate that people use social media networks extensively to seek information and support in such disasters and emergencies. Eriksson (2018) specifies that social media networks are a very effective communication tool in terms of managing risk and crisis communication during natural disasters or emergencies. In this context, similar to the crises and disasters in previous periods, social media networks have served as an important communication and information channel through which the public can access information about the disease at first hand also during the COVID-19 outbreak process (Jang & Baek, 2019). Since the beginning of the

epidemic, with the spread of information and discussions about the epidemic in social media networks, these networks have become the focus of attention of more and more people (Zhao et al., 2020).

Therefore, social media networks are becoming increasingly common throughout the world as an important health and communication resource for the general health of individuals and society during the pandemic process. Given this situation, the study focused on exploring the relationship of individuals' attitudes towards the outbreak-related social media networks during the COVID-19 pandemic process with e-health literacy and COVID-19 preventive health behavior. For this reason, it is predicted that understanding what role social media networks play during the epidemic will be important in terms of ensuring that governments, local, national, and international health organizations adopt attitude towards how people should behave in the epidemic. In addition, as social media networks are an important source of communication and information about health, it is thought that the analyzes and findings to be obtained will guide health institutions in developing e-health literacy and preventive health behavior. Therefore, this study believes that social media networks as an important communication and interaction tool regarding health will contribute to the protection and improvement of the general health levels of individuals and society.

In the remaining parts of the study, we justify the conceptual framework for understanding social media, e-health literacy, and preventive health behavior during the COVID-19 pandemic process. Also, we discussed theoretically the relationship between variables. Afterward, we tried to present a new perspective by trying to reveal the relationships between variables, based on the theoretical literature on variables. Relevant models and hypotheses have been created based on the theoric discussions. For the testing of models and hypotheses, the data were collected by applying the survey method. Results, inferences, limitations, and suggestions for further studies were discussed by performing statistical analysis for analyzing the data.

Social Media

Social media networks, where individuals come together and socialize by sharing their likes, thoughts, and suggestions, constitute one of the important communication and interaction tools today. Bozarth (2011) defines social media as the general name of web-based software and services that allow users to come together online and participate in all kinds of social interactions, discussions, and communications. Safko & Brake (2009) indicates social media is all kinds of digital media through which individuals communicate with other individuals to share their ideas, thoughts, and experiences by using internet technologies. Today, social media networks have become an important part of the lives of the users in terms of sharing ideas, thoughts, experiences, daily news, political, economic, and magazine events, as they can be shared very quickly and easily accessible (Newman et al., 2012; Mangold & Faulds, 2009). The United Nations reported that at the beginning of 2021, the world population was 7.83 billion. According to the, We Are Social January 2021 report, there are 4.66 (59.5% percent of the world population) billion internet users worldwide. On the other hand, 4.20 billion (53.6% percent of the world population) internet users use social media networks. Internet users spend an average of 6 hours and 54 minutes per day on internet networks, and social media users spend 2 hours and 25 minutes on social networks (Kemp, 2021). With the increasing popularity and increasing interest of social media networks around the world, these networks have become an important communication and interaction tool that is frequently preferred in many different areas.

e-Health Literacy

Health literacy is the capacity of individuals to provide, interpret and understand basic health information and services required to make correct health decisions (Peerson, 2009). The World Health Organization defines health literacy as the cognitive and social skills required for individuals to access, understand and use health-related information to improve their health and maintain

good health, rather than the basic skills required to read and understand health-related information (Nutbeam, 2000). e-health literacy is an up-to-date field that refers to the health services and information provided or developed through the internet and related technologies, formed by the intersection of medical informatics, public health, and the health sector (Eysenbach, 2001). Norman & Skinner (2006) indicated that e-health literacy is based on the concepts of both health and media literacy, which express the ability of an individual to seek, understand and evaluate health information from electronic sources and to make informed health decisions to address a health problem in daily activities. In this context, e-health literacy includes various skills such as the ability to use information technology to improve health outcomes, choose which program to use, know how to use the search engine, and read and evaluate an article or blog post (Zakaria et al., 2018).

Preventive health behavior

People generally tend to take certain measures to protect their health for a healthier and longer life. Activities such as avoiding drinking and foods harmful to health, eating more balanced, exercising regularly, participating in general check-up screening programs, and avoiding infectious diseases can be listed as health-protective measures (Werle, 2011). If people believe that these activities to protect their health or not, may have serious consequences for their health, they take action to control these health-related behaviors (Rosenstock, 1991). Kasl and Cobb (1966) define the behaviors people perform under these activities as preventive health behaviors. According to this definition, preventive health behavior is "the activity performed by a person who believes he is healthy to prevent the disease or to detect the disease at an asymptomatic stage".

Social Media, e-health Literacy, and COVID-19 Preventive health behavior

Today, in addition to using social media networks as an effective communication and interaction tool, it is becoming increasingly common as an important source of information that they frequently refer to, such as participating in health-related information, processing and applying the information to protect and promote their general health level (Atique et al, 2016). Chou et al, (2009) indicated social media networks constitute an important and cheap communication and interaction space in terms of health communication, Norman (2012) state social media networks offer important opportunities for health promotion and incentive and Robert et al. (2017) specify that it is a powerful tool used to disseminate clear and timely information about health. According to Boonwattanopas (2016), social media networks are powerful environments that have a significant potential for making health-related decisions such as accessing more health information, self-monitoring, and compliance with health rules. Jang & Baek (2019) states social media networks have functioned as first-hand information channels through which the public can obtain information about the disease during the COVID-19 pandemic process. Anderson & Vogels (2020) indicated that 70% of American people use the internet to access information about the COVID-19 outbreak, 76% of social media networks communicate with others to access information about the virus, and 37% share information about the virus on social networks. In this context, it can be stated that during the COVID-19 pandemic process, social media networks are one of the important media components that contribute to the development of the level of e-health literacy, which is defined as the search for health-related information resources, evaluation, and application of information. Also, social media networks are thought to encourage individuals' imperative health behavior by sharing the measures to be taken against the COVID-19 epidemic with large user masses very quickly and in real-time. Besides, the frequency of using social media networks for individuals to search for information

about the epidemic during the epidemic process is one of the important components of these networks. From this point of view, the research model and hypotheses of the study were formed as follows. Figure 1 demonstrates the research model for this research.

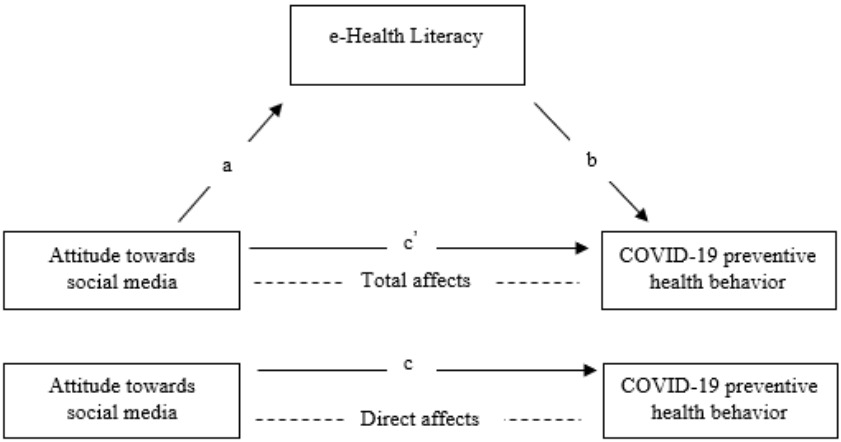

Figure 1: Research Model

H1: Attitudes towards social media have a significant and positive effect on e-health literacy.

H2: Attitudes towards social media have a significant and positive effect on COCVID-19 preventive health behavior.

H3: e-health literacy has a mediating role in the relationship of attitude towards social media with COCVID-19 preventive health behavior.

H4: Frequency of social media use is positively associated with e-health literacy during the COVID-19 pandemic.

H5: Frequency of social media use is positively associated with COVID-19 preventive health behavior during the COVID-19 pandemic.

Research Method

Measures

The data were collected through a questionnaire created on the Internet on Google Form. The participants' attitudes towards social media during the COVID-19 pandemic, the scale developed by Wang et al, (2009) and Chu et al, (2013) to measure consumers' attitudes towards social media advertisements were used. This scale consisted of 12 items. The e-health literacy of scale, developed by Norman & Skinner (2006) was used in the study to measure the participants' e-health literacy. This scale consisted of 8 items. The COVID 19 preventive health behavior scale, developed by Ali et al. (2020); Riiser et al. (2020); Morgul et al. (2020); Li & Lui (2020); Shahnazi et al, 2020) was used in the study to measure the participants' the preventive health behavior. This scale consisted of 13 items. All of the scales of the measurements were scored according to a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree).

Data collection

The data of the study were obtained by applying the survey method. The data were collected using the convenience sampling technique. The convenience sampling method was preferred in the research design because it is an easily applicable, less costly, and not time-consuming method. The universe of the study consists of individuals 18-64 years living in Turkey the convenience sampling method was used. Data was collected by Google Drive. The survey form was first applied by sharing with the close social environment, of the researchers. Then, the social environment of the researchers shared it with their social environment. In this way, a total of 773 survey data was obtained. For this used socila media tools. The data collection process started on January 26, 2021, and ended on-February 2, 2021.

Reliability Analysis

Cronbach Alpha reliability analyzes were performed to test the internal consistency of the scales used in the analysis. In the literature, it is suggested that the acceptable value of Cronbach Alpha should be a minimum 0,70 (DeVellis, 2016).

Table 1. Reliability Analysis Results Related to Scales

Scales	Item	N	Cronbach Alpha
Attitudes towards social media	12	773	0,908
e-health literacy	10	773	0,892
COVID-19 Preventive health behavior	13	773	0,845

Data analysis

A mediation analysis using multiple regression was conducted to test the mediator impact of mediating variables in the relationship between independent and dependent (Baron & Kenny, 1986). According to this model, firstly, regression analysis should be performed to determine the impact of the independent variable on the mediating variable and secondly, the impact of the independent variable on the dependent variable. In both regression analyzes, if the independent variable has a predictive effect on dependent variables, the mediation effect analysis can only be performed. After obtaining results suitable for the procedure summarized by Baron and Kenny (1986), multiple regression analysis is performed by including the mediator variable in this relationship between the independent variable and the dependent variable. When the mediator variable is included in the regression analysis, if there is a decrease in the beta coefficient between the dependent variable and the independent variable and any deterioration in the significance level, we can talk about the mediating effect. If the meaning disappears completely, we express it as a full mediator effect, if partial distortion occurs in the media, we express it as a partial mediator effect (Howell, 2012; MacKinnon et al., 2007). Also, in addition to the conditions to be met to be able to talk about the mediating effect,

it is necessary to determine whether the indirect effect (a.b path) is significant. To determine this, the significance Z score test of the Sobel Test should be performed and the result obtained should be greater than 1.96 and the p-value should be significant (Fraziar et al., 2004). According to this model, the mediation relationship between variables is tested with a model in Fig 2 shown below.

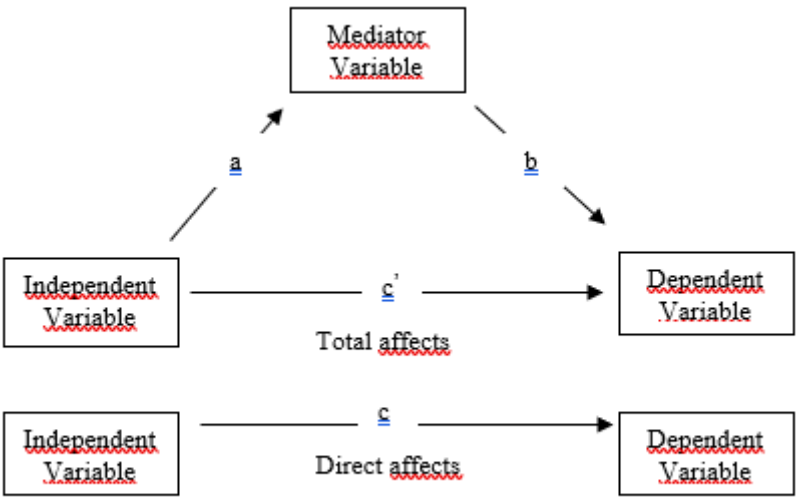

Figure 2: Mediator Model

Result

Sociodemographic characteristics of our research sample

Table 2 presents the descriptive characteristics of the participants. Among the 773 participants, 417 (46,00 %) were male and 356 (54,00%) were female. The group with the highest age ratio among the participants in the age range of 35-44. (30.66%). The highest rate of education is a bachelor's degree 315 (40.75%) and the highest income group is below $ 400, comprising 237 (30.70%) participants.

Table 2. Sociodemographic Characteristics Of Our Research Sample

Characteristic	n	%
Gender		
Female	356	46,00
Male	417	54,00
Marital status		
Single	326	42,00
Married	447	58,00
Age		
18-24 years	189	24,45
25-34 years	210	27,17
35-44 years	237	30,66
45-54 years	107	13,84
55-64 years	30	3,88
Education		
Primary education	37	4,79
High school	179	23,16
Associate degree	105	13,58
Bachelor's degree	315	40,75
Master's degree and above	137	17,72
Income ($)		
<400	237	30,70
401-700	195	25,20
701-1000	167	21,60
1001-1300	83	10,70
>1600	91	11,80

Descriptive statistics on attitudes towards social media, e-health literacy, and COVID 19 preventive e-health behavior.

When the basic statistics related to the research variables in Table 3 were analyzed, the average of the points given by the participants to the attitudes towards social media was 3.48 ± 1.34, the average of the points they gave to the e-health literacy scale was 4.28 ± 0,41, and the average of the points they gave to the COVID-19 preventive health behavior scale was 4.42 ± 1.14. Accordingly, it can be said that the participants' level of e-health literacy and COVID-19 preventive health behavior levels were very high while their attitudes towards social media levels was high.

Table 3. Mean Scores And Standard Deviations Of The Scales

Items	Mean	SD
Attitudes Towards Social Media		
Social media networks are a good source of information about the COVID-19 pandemic.	3,41	1,60
Social media networks provide up-to-date information about COVID-19.	3,65	1,54
I think their networks on social media are showing me the information I'm looking for about the COVID-19 outbreak.	3,68	1,50
Information shared on social media networks with the COVID-19 outbreak is reliable.	2,76	1,37
I think the information shared on social media networks with the COVID-19 outbreak is convincing.	2,98	1,45
I think the information shared with the social media COVID-19 outbreak is correct.	3,05	1,42
I share the information I find useful about the COVID-19 outbreak on social media networks in my account.	2,81	1,78

I follow experts on social media to learn about the news about the COVID-19 outbreak.	3,97	1,58
When I see news about the COVID-19 outbreak on social media networks, I watch carefully.	3,85	1,50
I think social media networks are important in terms of easy access to information about Covid 19.	4,10	1,39
I think social media networks are useful in sharing information about Covid 19.	4,03	1,44
I think the information shared on social media networks with the COVID-19 outbreak is useful.	3,46	1,47
e-health Literacy		
I know what health resources are available on the Internet.	4,08	1,38
I know where to find helpful health resources on the Internet.	4,17	1,36
I know how to find helpful health resources on the Internet.	4,29	1,28
I know how to use the Internet to answer my health questions.	4,49	1,12
I know how to use the health information I find on the Internet to help me.	4,36	1,24
I have the skills I need to evaluate the health resources I find on the Internet.	4,31	1,27
I can tell high quality from low-quality health resources on the Internet.	4,35	1,17
I feel confident in using information from the Internet to make health decisions.	4,23	1,30
COVID-19 Preventive Health Behavior		
Wash my hands after going home.	4,89	0,56
Wash my hands with soap or hand sanitizer for at least 20 seconds every time.	4,75	0,84
Wear a mask correctly when I go out.	4,81	0,77

I change my mask every 4 hours.	3,76	1,58
Cover my mouth and nose completely with a tissue or sleeves when coughing or sneezing.	4,79	0,77
Keep the windows open for air circulation every day.	4,69	0,89
Change my clothes as soon as I get home.	4,42	1,23
Disinfect my mobile phone, keys, and laptop with alcohol every day.	3,75	1,66
Don't go to shopping malls, supermarkets, hospitals, or other places where people usually gather recently	3,79	1,62
I clean the grocery bags or packages when I come from shopping.	4,62	0,99
I do business, school, friends, and family meetings online.	4,28	1,30
I avoid visiting friends and relatives.	4,42	1,17
I try to stay at least 1.5 meters away with people standing near me.	4,55	1,05

Note: Response format: 1 = strongly disagree; 5 = strongly agree

One Way ANOVA and T-test Analysis For Variables

In Table 4, the scores of the participants regarding the attitudes towards social media, e-health literacy, and COVID-19 preventive health behavior scales were compared based on variables such as age, gender, marital status, education level, income level test results were presented.

Table 4. One-Way ANOVA and T-Test Results For Variables

Variables	Attitudes towards social media		e-health literacy		Preventive Health Behavior of COVİD-19	
	Mean	SD	Mean	SD	Mean	SD
Gender						
Female	3,66	0,96	4,35	0,87	4,57	0,61
Male	3,32	1,12	4,23	1,02	4,30	0,72
	t= 4,550	**p= 0,000**	t= 1,806	p= 0,071	**t= 5,774**	**p= 0,000**
Marital status						
Single	4,24	0,94	4,24	0,94	4,41	0,63
Married	4,31	0,97	4,31	0,97	4,44	0,73
	t= 0,752	p= 0,452	t = -0,995	p= 0,320	t= -0,510	p= 0,515
Age						
18-24 years[1]	3,46	0,96	4,35	0,71	4,36	0,64
25-34 years[2]	3,59	1,00	4,40	0,71	4,53	0,65
35-44 years[3]	3,50	1,13	4,37	0,73	4,33	0,77
45-54 years[4]	3,20	1,14	4,54	0,58	4,47	0,64
55-64 years[5]	3,72	1,12	4,57	0,70	4,74	0,54
	F= 2,884	**p= 0,022**	F= 1,747	p= 0,138	**F= 4,489**	**p= 0,001**
	2-4				1-5; 2-3; 3-5	
Educational level						
Primary education[1]	3,26	1,35	4,16	1,25	4,46	0,68
High school[2]	3,52	0,97	4,33	0,66	4,34	0,75
Associate degree[3]	3,48	1,06	4,56	0,65	4,54	0,60
Bachelor's degree[4]	3,48	1,05	4,44	0,66	4,43	0,71

Master's and above[5]	3,49	1,13	4,39	0,65	4,42	0,61
	F= 0,469	p= 0,759	**F= 3,326**	**p= 0,012**	F= 0,971	p= 0,423
Income level($)			2-3			
<400[1]	3,45	0,99	4,33	0,79	4,44	0,68
401-700[2]	3,60	0,99	4,44	0,63	4,48	0,63
701-1000[3]	3,52	1,11	4,45	0,71	4,42	0,70
1001-1300[4]	3,35	1,23	4,43	0,68	4,35	0,80
>1600[5]	3,33	1,13	4,44	0,58	4,33	0,69
	F= 1,498	p= 0,201	F= 0,971	p= 0,423	F= 1,044	p= 0,383

As a result of the analysis, it was determined that the scores of the participants regarding attitudes towards social media levels showed statistically significant differences according to gender (t = 4.550; p = .000) and age level (F = 2.884; p = 0.022). Attitudes towards social media of females makes scores higher than males.

e-Health literacy showed statistically significant differences according to only education level (F = 3.326; p = 0.012). According to this, e-health literacy scores of people between the education level of high school degree and above and associate degree and above statistically significant differences. Scores of individuals with associate degree levels are higher than high school levels.

Finally, in the study, it was determined that the scores of the participants regarding COVID-19 preventive health behavior levels showed statistically significant differences according to gender (t = 5.774; p = 0.000) and age level (F = 4.489; p = 0.001). COVID-19 preventive health behavior levels of females make scores higher than males. Also, COVID-19 preventive health behavior scores of people between the age level of 18-24 and 35-44; 25-34 and 35-44; 35-44 and 55-64 statistically significant differences. Accordingly, as the

age ranges of the participants increase, it is seen that the COVID-19 preventive health behavior scores also increase.

In Table 5, the scores of the participants regarding the social media use frequency, e-health literacy, and COVID-19 preventive health behavior scales were compared based on variables such as age, gender, marital status, education level, income level test results were presented.

Table 5. One-Way ANOVA Test For Variables

Variables	e-health literacy		COVID-19 Preventive Health Behavior	
	Mean	SD	Mean	SD
Use frequency				
Never[1]	3,89	1,26	4,21	0,83
1-2 times[2]	4,20	1,00	4,40	0,70
3-4 times[3]	4,36	0,81	4,46	0,64
5-6 times[4]	4,54	0,70	4,66	0,43
7 and more times[5]	4,50	0,77	4,45	0,67
	1-3; 1-4; 1-5; 3-1; 2-5; 2-7		1-4; 2-4; 3-4; 4-5	
	F= 8,613	**p= 0,000**	F= 4,996	**p=0,001**

As a result of the analysis, it was determined that the scores of the participants regarding attitudes towards social media use frequency levels showed statistically significant differences according to e-health literacy (F = 8.613; p = 0.000) and COVID-19 preventive health behavior levels (F = 4.996; p = 0.001). Accordingly, as the frequency of the participants' use of social media increases, their e-health literacy and COVID-19 health behavior

scores also increase. This result shows that the H4 and H5 hypothesis is accepted.

Predictors and Mediator of COVID-19 Preventive Health Behaviors

The mediating effect of e-health literacy on the relationship between attitudes towards social media and COVID-19 preventive health behavior has been examined. When Table 6 is examined, attitudes towards social media has a significant predictive effect on e-health literacy in the linear regression analysis performed in the first stage, and the model is significant (R2: ,1468, F: 133,223, p <0.05). The power of attitudes towards social media to affect e-health literacy is 24.77% (β = 0.2477, t = 7.932, p <.000). Also, the bootstrap confidence interval does not contain a "0" point and has a positive value. This result shows that the H1 hypothesis is accepted. In the second stage regression, attitudes towards social media has a significant predictive effect on COVID-19 preventive health behavior and the model is significant (R2: 0, 0489, F: 39,621, p <0.05). The power of attitudes towards social media to affect COVID-19 preventive health behavior is 26.51% (β = 0,2651, t = 6.294, p <.000). Also, the bootstrap confidence interval does not contain a "0" point and has a positive value. This result shows that the H2 hypothesis is accepted. Finally, in the third stage, the e-health literacy variable was included in the model to determine the mediating role of e-health literacy between the attitudes towards social media and COVID-19 preventive health behavior. In this model, in which attitudes towards social media and e-health literacy take place together, it was observed that the effect of attitudes towards social media was reduced (β = 0,0990, t = 4,337, p <.000), although it maintained its level of significance in predicting COVID-19 preventive health behavior. Based on these results, based on the analysis of the mediating variable effect of Baron and Kenny (1986), it shows that e-health literacy is in a partial mediating position between attitudes towards social media and COVID-19 preventive health behavior. To test whether the mediation was statistically significant or not, the sobel test was performed and the z value calculated according to the results of the Sobel test was found to be

5.20 (p <.001). This result shows that e-health literacy is the mediating variable in the relationship between attitudes towards social media and COVID-19 preventive health behavior. This result shows that the H3 hypothesis is accepted.

Table 6. Predictors and Mediator of COVID-19 Preventive Health Behaviors

First stage regression: eHealty literacy (Dependent Variable)						
	β	**s.e**	**t**	**p**	**LLCI**	**ULCI**
Constant	3,422	0,1136	30,131	0,000	3,1992	3,6451
Independent Variable: Attitudes towards social media	0,2477	0,0312	7,932	0,000	0,1864	0,3090
Model Summary	R^2: 0,0755		s.e: 0,8476		F: 62,912	
			p:,0000			
Second stage regression: COVID-19 Preventive health behavior (Dependent Variable)						
	β	**s.e**	**t**	**p**	**LLCI**	**ULCI**
Constant	3,9261	0,0827	47,459	0,000	3,7637	4,0885
Independent Variable: Attitudes towards social media	0,1432	0,0227	6,294	0,000	0,0985	0,1878
Model Summary	R^2: 0,0489		s.e: 0,4496		F: 39,621	
			p:,0000			
Third stage regression: COVID-19 Preventive health behavior (Dependent Variable)						
	β	**s.e**	**t**	**p**	**LLCI**	**ULCI**
Constant	3,3248	0,1185	28,046	0,000	3,0921	3,5575

Independent Variable: Attitudes towards social media	0,0997	0,023	4,337	0,000	0,0546	0,1448
Mediator Variable: eHealty litreacy	0,1757	0,0255	6,898	0,000	0,1257	0,2257
Model Summary	R^2: 0,1042	s.e: ,4240		F: 44,801		p:,0000

As seen in the Table 7 the total effect of attitudes towards social media on COVID-19 preventive health behavior is β = 0,1432 and the significant value is p = 0,000. With the inclusion of e-health literacy in the model, there is a decrease in the beta coefficient of e attitudes towards social media. As can be seen from the table, the total effect value was found to be 0,1452, the direct effect value was 0,0997, the indirect effect value was 0,0435, and the bootstrap confidence interval was 0,0546-0,1448. Since the confidence intervals do not contain zero, it was concluded that the mediating effect was significant (Baron and Kenny, 1986).

Table 7. Total, Direct, And Indirect Effects

The Relationship between Mediator of eHealty literacy	Total Effect	Direct Effect	Indirect Effect	Bootstrap confidence interval BoLLCI-BoULC	Mediator Effect Type
Attitudes towards Social media COVID-19 Preventive health behavior	0,1432	0,0997	0,0435	0,0546-0,1448	Partial

Discussion

This study research the impact of individuals' attitudes towards social media during the COVID-19 pandemic on e-health literacy and individuals' preventive health behaviors against the COVID-19 pandemic. It also researches the relationship between individuals' frequency of social media use during the epidemic and e-health literacy and COVID-19 preventive health behavior. In the study, individuals in the 18-64 age range in Turkey, attitude towards social media, social media frequency usage, and e-health literacy, COVID-19 preventive health behavior attempting to determine the relationship between is expected to contribute significantly to the literature. Also, it is thought that the findings will guide health institutions in developing e-health literacy and preventive health behaviors.

In the regression analysis results of the study, it was concluded that the attitudes of individuals towards social media during the COVID-19 pandemic significantly and positively affects e-health literacy. Wu et al (2020) state that the communication and interaction that patients create with healthcare professionals on social media networks is related to e-health literacy. Thackeray et al. (2013) states that social media networks have become an important resource that people can easily access health information. People can make decisions more easily by reading the discussions and evaluations made through social media networks about health. Chretien & Kind (2013) states in social media networks that the experiences of chronic patients about their illnesses can turn into information that will guide other patients in search of information on that subject. Greene et al. (2011) concluded that the patients received help to manage their diabetes, to get emotional support, and to get clinical information in the analysis they made on Facebook for the posts of diabetes gurus. Tennant et al. (2015) state that patients who constitute the high-risk group in terms of health outcomes are increasingly using social media to find and categorize health information. Dudley et al. (2019) have a lot of health information on social media networks that will contribute to the development of

health literacy. Social media networks constitute a broad-based source of communication and interaction related to health. People can search for health-related information easily and quickly, without any barriers. The free discussion environment provided by these networks to the users provides an important contribution to the interactive discussion of health information. To find answers to their questions about health or illness, users can communicate and discuss their problems without any obstacle to the experts in the field on social media networks. This situation plays an important role in improving and managing the health conditions of individuals due to the solution of their health problems. Therefore, it can be stated that easy and fast access to information about the epidemic through social media networks during the COVID-19 pandemic process can positively affect e-health literacy behavior levels, which play a decisive role in health outcomes.

Another conclusion reached in the analysis is that individuals' attitudes towards social media during the pandemic process significantly and positively affect the preventive health behavior of COVID-19. Snyder & Rouse (1995) states that media communication tools are a vital tool that affects individuals' perception of risk related to the disease. Jang & Baek (2019) states that information about the outbreak in social media networks can affect people's risk perceptions and behaviors. Based on this, it can be said that the information shared on health in social media networks can encourage individuals to change behavior (Laranjo et al., 2015). Therefore, exposure of individuals to information about the COVID-19 outbreak in social media networks will shape the individual's perception of risk related to the epidemic and contribute to the adoption of preventive attitudes and behaviors (Zeballos et al., 2021). Oh et al. (2020) states that risk perception is also associated with the adoption of protective behaviors such as social distance and the use of masks, and that information shared on social media networks about the epidemic plays an important role in preventive health behavior. Therefore, content created by users related to the outbreak in social media networks played an important role (Gottlieb

& Dyer 2020) in promoting preventive health behavior against COVID-19 during the epidemic (Li & Liu, 2020).

Another important conclusion reached in the analysis is that the part of e-health literacy is the mediator variable in the relationship between attitudes towards social media and COVID-19 preventive health behavior. This result indicates that e-health literacy is a determining variable in the impact of attitudes towards social media on COVID-19 preventive health behavior. In other words, the ability of individuals to search, evaluate and apply health-related information on social media networks has a partial and significant impact on COVID-19 preventive health behavior.

Another result obtained from the analysis is the result that the frequency of social media use of individuals during the COVID-19 pandemic epidemic is positively and significantly associated with e-health literacy and COVID-19 protective health behavior. This result means that as the frequency of the participants' use of social media increases, their e-health literacy levels and their COVID-19 preventive health behavior will also increase.

The results of our study should be considered in light of several limitations, and the following improvements can be implemented in future studies. The research data were collected digitally due to the limitations of the COVID-19 disease; Therefore, the random sampling method could not be chosen. Therefore, the convenience sampling method constitutes the limitations of this study in terms of time, cost, and convenience. Also, research has focused on the behavior of individuals for the COVID-19 outbreak in Turkey. The results cannot be generalized due to the sampling method and research population preferred within the scope of the research. To contribute to the generalization of study results, it is recommended that a larger sample of future studies be applied.

Conclusions

In this study, we examined the relationship between attitudes towards social media of individuals during the COVID-19 pandemic

with e-health literacy and COVID-19 preventive health behavior, and further the mediating role of e-health literacy in this relationship. It also researches the relationship between individuals' frequency of social media use during the epidemic and e-health literacy and COVID-19 preventive health behavior. In the analysis conducted, it was concluded that the attitudes towards social media of individuals has significant and positive effects on e-health literacy and preventive COVID-19 health behavior. It has also been found that e-health literacy has a partial mediating role in the relationship between attitudes towards social media and COVID-19 preventive health behavior. In addition, it was concluded that individuals' frequency of social media use during the COVID-19 pandemic outbreak had a positive and significant relationship with e-health literacy and COVID-19 preventive health behavior.

Practice Implications

Global and local health organizations have used social media networks extensively to prevent the spread of the COVID-19 outbreak, to combat the epidemic, and to improve the commitment of individuals to the recommended protective measures related to the epidemic. Today, the number of World Health Organization followers has 9 million followers. Similarly, the total number of followers of many health-related official and unofficial institutions or people around the world creates a huge community. This means that during the COVID-19 pandemic, the knowledge about the epidemic and the measures to be taken are communicated to millions of people in real-time. For this reason, it can be said that it is of vital importance for healthcare organizations on a local or global scale to create more content on social media networks during the COVID-19 pandemic to combat this or subsequent epidemics. Undoubtedly, in the COVID-19 pandemic epidemic, the rapid transmission of epidemic-related disease information to individuals plays an important role in the development of preventive health behavior towards the epidemic. For this reason, it is thought that it is important for governments, local health organizations, and global health organizations to be more active in social media networks and to

provide real-time information about the health of individuals in order to improve e-health literacy and preventive health behavior.

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CHAPTER V

The Relationship between Biological Capacity, Economic Growth, Carbon Dioxide Emissions and Urbanization: Panel Causality Findings from the BRIICS Countries

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Introduction

Many socio-economic factors such as economic growth, population, urbanization, carbon emissions, etc. significantly affect environmental health. The negative impact of these factors on the environment is increasing day by day, negatively affecting the sustainability of economic prosperity and consuming the potential environmental assets of future generations.

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It is crucial to determine what type of interaction mechanism works via the effects of these socio-economic factors in order to reduce and eliminate their destructive effects. In this way, as the sustainable development process continues, the extent of the possible destruction that urbanization, especially economic growth, will cause on nature and the environment, in other words, the bitter prescriptions of growth and economic development, will be understood better.

This book chapter was developed to analyze the long-term relationship network between biological capacity, economic growth, carbon dioxide emissions and urbanization in the sample of the group of countries called BRIICS. In the first part, the basic theoretical framework of the subject is briefly explained, in the second part, a summary of the selected empirical literature is given, and in the third and last part, the methodology and analysis findings of the study are presented to the readers.

Theoretical Framework and Literature

Both economic growth and social welfare levels have increased in many countries. However, over time, especially in recent times, it has been constantly discussed whether growth can be sustained or even its level of desirability. Because, with economic development and industrialization, the increase in living standards and the acceleration of population growth lead to many environmental problems (Apaydın, 2020: 301). These problems negatively affect the biological capacity of nature and the ecosystem due to environmental degradations.

Biocapacity is a concept that shows to what extent the biosphere can renew itself and provide the resources and services required to support a sustainable ecosystem. If the ecological footprint of a country, which can be defined as the amount of biologically productive land and water that the population must use to support the urban infrastructure it occupies, to produce all the resources it consumes, and to eliminate all the waste it produces,

exceeds its biological capacity measured by its population, that country is in ecological deficit (Okay Toprak, 2023: 790).

Promoting sustainable consumption and production that ensures sustainable economic growth as industrialization, urbanization and commercial activities take place; It plays a key role in protecting and improving environmental quality and preventing and reducing environmental pollution (Karanfil, 2023: 90). In this regard, it is considered necessary to diversify investments in order to reduce environmental destruction and increase biological capacity, to increase the efficiency of productive areas, to increase people's knowledge in terms of natural resource use in production processes, to provide sustainable financing for green investments and to control human demand on nature.

Industrialization and urbanization that come with economic growth increase environmental degradation and overstress biological capacity. In this regard, promoting environmental standards and environmentally friendly solutions in the process of urbanization and economic development will reduce the mentioned overload, reduce the levels of carbon emissions and thus help ensure environmental sustainability (Karasoy, 2021: 222). In the later stages of economic development, environmental awareness develops in societies and project investments that will reduce negative pressures on the environment become important. In this respect, economies are investing in environmental innovations that will increase biodiversity and reduce the effects of pollutants (Zuhal, 2022). These technologies also make important contributions to preserving the current structure of biocapacity.

There is a wide variety of studies in the literature on topics such as energy consumption, carbon dioxide emissions, environment, etc. While some of the studies in question analyze environmental degradation within the framework of ecological footprint (Rashid et al. 2018; Öcal et al. 2020; Destek and Sarkodie: 2019), some other studies analyze environmental degradation

through carbon footprint (Liobikiene and Dagiliüte, 2016; Tian et al., 2014; Fan et al., 2012; Bello et al., 2018).

On the other hand, studies in the literature that consider ecological footprint and biological capacity together evaluate environmental degradation within the framework of ecological deficit. For example, Sarkodie (2021) tried to draw a general framework for ecological performance, biological capacity and carbon footprint in his study including 245 countries. The study analyzed the period between 1961 and 2016 and evaluated the socio-economic factors of environmental performance and convergence. According to the results obtained, improving environmental performance has a healing effect on the biological capacity of nations and therefore on ecological performance. On the other hand, the study emphasizes the existence of environmental convergence between countries and suggests that carbon and ecological footprint inequality between high- and low-income countries will converge in the long term. The study also expresses the need for global cooperation to ensure environmental sustainability.

Coscieme et al. (2016) categorizes the world countries as ecological creditors and ecological debtors and interprets the difference between the two variables as ecological deficit. In their study, in which they characterized developed countries with high consumption rates and therefore high production capabilities as ecological deficit-forming countries, they concluded that ecological limits are ignored due to the ever-increasing production of goods and services. Due to the ecological deficit, the ecological footprint is increasing day by day and the biological capacity is decreasing. Another result obtained from the study is that investors in high-income countries where ecological deficit occurs tend to buy land abroad, and this situation reduces the biological capacity in foreign countries, making them more vulnerable to the emergence of ecological deficit. As a result of these purchases, biologically productive lands are being depleted, thus threatening sustainable development.

Labib et al. (2018) analyzed the effect of carbon dioxide emissions caused by urban traffic on biological capacity in Dhaka, the capital of Bangladesh.In this context, traffic volume, fuel types and travel distances of vehicles were used to estimate CO2 emissions on the main links in Dhaka, the transportation network of the capital of Bangladesh. In the analysis where biological productive areas close to the city were identified and biological capacities were estimated, a biological capacity index was developed through regional CO2 emissions. According to the results obtained, it was observed that nine out of ten nodes examined in Dhaka city had very low biocapacity index values. This situation means very high CO2 emissions and low biological capacity. As a result, the study states that these areas are environmentally unsustainable due to increasing traffic nodes.

Niccolucci et al. (2012) conducted a study to evaluate different development paths of ecological footprint and biological capacity in many countries of the world between 1961 and 2007. Four main dynamic typologies were determined in the study: parallel, scissor, wedge and descent. Each typological dynamic is explained by a number of variables, mainly population trends and other variables such as environmental performance index, environmental sustainability index and human development index. As a result of the study, it is revealed that biological capacity is an ecological wealth that has strategic importance in geopolitical terms, increases competitiveness, plays a fundamental role in the development of relations in the international arena and contributes to the improvement of the quality of life of societies.

Kovacs et al. (2022) measures the impact of urbanization in Hungary on environmental sustainability by considering long-term changes in ecological footprint and biological capacity in the city center of Budapest, Hungary. A hybrid method using input-output model and household consumption data was used to calculate the regional ecological footprint, which is one of the variables of the research, and biological capacity was measured based on land use data. The results show that the decrease in population and increase

in biological capacity has reduced the country's ecological deficit since the early 2000s. Environmental unsustainability in central Budapest is partly due to demographic factors and partly to ecological footprint values per capita. The study concluded that political authorities in aging societies with a highly centralized urbanization system, such as Hungary, should initiate programs specifically targeting metropolitan areas to increase environmental efficiency and direct society towards more environmentally friendly consumption habits.

Danish et al. (2019) analyzed the relationship between economic growth and ecological footprint, human capital and biocapacity in Pakistan. According to the results obtained in the study analyzing the period between 1971 and 2014, economic growth has a positive effect on the ecological footprint, while biological capacity has a positive and significant relationship with the ecological footprint. These results show that existing resources are not sufficient to absorb pollution and improve Pakistan's ecological footprint. Moreover, although the effect of human capital on the ecological footprint is insignificant, the causal relationship between the ecological footprint and biocapacity and between the ecological footprint and economic growth is neutral.

Horsburgh et al. (2022) In the study evaluating the biological capacity of Scotland, the 2050 biocapacity effects of the restoration targets of swampy areas called peatlands were analyzed and the cost per ton of greenhouse gases reduced by various peatland restoration scenarios was estimated. These estimates were compared with afforestation reduction cost estimates. The results show that Scotland's per capita biocapacity exceeds the UK average by three times. On the other hand, while peatlands cover 25% of the total land area, peatland biocapacity increases Scotland's total biocapacity by only 2%. Additionally, the carbon footprint caused by degraded peatlands increases Scotland's ecological deficit by 40%. It is also estimated that Scotland's current peatland restoration targets will reduce its ecological footprint by 9% by 2050. Finally, the findings provide evidence in favor of increasing peatland restoration, both in

terms of increasing biological capacity and economic cost-effectiveness.

In their study on African countries, Mari and Puertas (2020) used ecological footprint and country size as determinants of production level in order to calculate production efficiency in 45 African countries. In addition, the temporal impact of ecological footprint and biological capacity was analyzed to determine possible trends in both variables and to draw conclusions indicating the most appropriate environmental policies to be adopted. The findings obtained as a result of the analysis reveal that there are similar productivity levels between a group of countries with an ecological deficit and another group of countries with an ecological surplus. The study emphasizes that technological advancement policies that encourage sustainable economic development and are appropriate to the existing biocapacity should be implemented in countries that have a biocapacity deficit and have a consumption level compatible with production capacity. Finally, by using innovative technologies, these countries will be able to turn their excessive population into a potential workforce that will support sustainable growth.

Ahmed et al. (2022) empirically investigated the effects of urbanization, economic growth and industrialization on the biological capacity that controls human capital in Brazil, one of the richest countries in the world in terms of natural resources, and examined the period between 1961 and 2016. The findings obtained in the study which focused on the effect of economic growth on biological capacity, shows that it decreases. Urbanization has a decreasing effect on biological capacity per capita. In other words, urbanization is an important determinant of the decrease in biological capacity. Additionally, urbanization and economic growth are the cause of biocapacity. Finally, various policy implications are suggested to overcome the decline in biocapacity.

Methodology and Empirical Findings

In this study, the relationship between biological capacity (BIOCAP), economic growth (GDP), carbon dioxide emissions

(CO2) and urbanization (URB) is analyzed for the period between 1992-2019 in 6 BRIICS countries, namely Brazil, Russia, India, Indonesia, China and South Africa. GDP, CO2 and URB data were obtained from the World Bank website, while BIOCAP data were obtained from the Global Footprint Network website. BIOCAP data is expressed in per capita capacity, while GDP data is expressed in annual growth rates. On the other hand, CO2 is expressed in terms of metric tonnes per capita and URB is expressed in terms of growth rate.

BIOCAP refers to the capacity of the ecosystem to reproduce the biological materials used by humans and the capacity to absorb the wastes generated by humans from the earth. BIOCAP varies over the years depending on climate, environment and human activities. The calculation of BIOCAP is based on the product of the yield factor of the physical area and the appropriate equivalence factor. On the other hand, BIOCAP is expressed in global hectares. Global hectare is accepted as the unit of measurement of BIOCAP. The reason for using global hectares as a unit of measurement is that different land types have different productivity. For example, one hectare of global cropland covers a smaller physical area than pasture land, which is much less biologically productive. In other words, more pasture land is required to provide the same BIOCAP as one hectare of cropland (data.footprintnetwork).

The stationarity of a series is crucial when constructing econometric models. Results obtained from non-stationary series are unreliable. Therefore, the reliability of the analyses is closely related to the stationarity of the series. In econometric analyses, unit root tests are used to determine the stationarity of the series. The unit root tests are divided into two groups. The first group, known as first-generation tests, assumes no correlation between the series. The second group, known as second-generation tests, considers the correlation between the units. In deciding which set of tests to use, it is necessary to test for inter-unit correlation. Several inter-unit correlation tests are available in the literature. The Breusch Pagan (1980) test is used when the unit size of the time dimension (T) is

larger than (N). When the unit size of the time dimension (T) is smaller than (N), the CD test -developed by Pesaran (2004)- is used. In this study, the Breusch Pagan LM test is used since the time dimension is larger than the unit dimension, i.e., T > N. The Breusch Pagan LM test is used to test:

H_0 : cov (uit, ujt) = pij = 0 and i ≠ j is valid for all t values.

The hypothesis is the null hypothesis of the Breusch Pagan inter-unit correlation test. The Breusch Pagan LM test statistic is written as follows based on the null hypothesis.

$$LM = T \sum_{i=1}^{N-1} \sum_{j=i+1}^{N} \hat{\rho}_{ij}^2$$

The LM equation uses $\hat{\rho}_{ij}^2$, to denote the sample estimate of the pairwise correlation of residuals i and j. This value is calculated using the formula presented in the following equation.

$$\hat{\rho}_{ij} = \hat{\rho}_{ji} = \frac{\sum_{t=1}^{T} e_{it} e_{jt}}{\left(\sum_{t=1}^{T} e_{it}^2\right)^{1/2} \left(\sum_{t=1}^{T} e_{jt}^2\right)^{1/2}}$$

The expression 'e_{it}' in the above equation is defined as $e_{it} = y_{it} - \hat{\alpha}_i - \hat{\beta}_i' x_{it}$. This equation uses '$e_{it}$' to represent the EKK estimation of the error term u_{it} and the residual estimates (Pesaran, 2004). Additionally, when T → ∞ and N is constant, the Breusch Pagan (LM) inter-unit correlation test remains valid. It has an asymptotic $\chi 2$ distribution with N(N-1)/2 degrees of freedom (Baltagi et al, 2012:165). Table 1 presents the results of the inter-unit correlation test.

Table 1. Inter-unit Correlation Test

Tests	Statistics	P value
LM	36.31	0.0016*
LM adj*	9.923	0.0000*

* denotes statistical significance at 1% level.

Table 1 presents the results of the Breusch Pagan inter-unit correlation (LM) test for the entire panel. The probability value is less than the critical value of 0.05, indicating that the LM test rejects the null hypothesis H_0, which assumes no correlation between units. Therefore, there is an inter-unit correlation in the series. The stationarity of the series is determined after this point. When inter-unit correlation is present, second-generation unit root tests are used.

In this study, we can test whether the series has a unit root using the horizontal cross-section extended Dickey Fuller (CADF) unit root test developed by Pesaran. Pesaran's (2007) unit root tests do not rely on deviations from estimated factors. Instead, he advocates for including the first differences of individual series and the horizontal cross-sectional averages of their lagged values in standard DF (or ADF) regressions (Pesaran, 2007:266). The hypothesis used to test the stationarity of the series in the CADF unit root test is;

H_0:β_i =0

is valid for all i. The null hypothesis argues that the series contains a unit root. The alternative hypothesis is:

H_1: β_i <0

From the equation; (i=1,2,……N_i) β_i =0, i= N_{i+1}+$_{Ni+2}$,….N is expressed as. The CADF test statistic is asymptotically similar and does not depend on factor loadings. The CADF test statistic is expressed as an equation:

$$t_i(N,T) = \frac{\Delta Y_i' \bar{M}_w Y_{i-1}}{\hat{\sigma}_i (Y_{i-1}{}' \bar{M}_w Y_{i-1})^{1/2}}$$

can be expressed as follows. The unit root test results of the series are presented in Table-2.

Tablo 2. CADF Unit Root Test

Variables	t bar	cv10 (%90)	cv5 (%95)	cv1 (%99)	Z(t-bar)	P value
BIOCAP	-2.315	-2.730	-2.860	-3.100	-0.014	0.495
CO2	-2.481	-2.730	-2.860	-3.100	-0.450	0.326
GDP	-2.715	-2.730	-2.860	-3.100	-1.060	0.143
URB	-2.604	-2.730	-2.860	-3.100	-0.775	0.219
First Diffirences	t bar	cv10 (%90)	cv5 (%95)	cv1 (%99)	Z(t-bar)	P value
DBIOCAP	-4.180*	-2.730	-2.860	-3.100	-4.926	0.000
DCO2	-2.976**	-2.730	-2.860	-3.100	-1.754	0.040
DGDP	-3.715*	-2.730	-2.860	-3.100	-3.701	0.000
DURB	-3.425*	-2.730	-2.860	-3.100	-2.937	0.002

* and ** denote statistical significance at the 1% and 5% level, respectively.

Based on the CADF unit root test, for trend and one lag, the t-bar test statistic values for BIOCAP, CO2, GDP, and URB are smaller in absolute value than the critical values in the table at cv10, cv5, and cv1 confidence levels. The CO2 variable is statistically significant at the 5% level, while the other variables are at the 1% level.

After performing unit root tests on the series, a homogeneity test is performed to determine the homogeneity and heterogeneity of the constant and slope parameters of the series based on the units. It is important before performing the causality test in the next part of the study. Tests such as the F, Swamy, G, and Delta tests are commonly used to determine homogeneity. This study uses the Delta test proposed by Pesaran and Yamagata (2008). Pesaran and Yamagata (2008) developed two delta statistics for large ($\Delta\tilde{}$) and small ($\Delta\tilde{}adj$) samples.

$$\hat{\Delta} = \sqrt{N}\left\{\frac{N^{-1}S - k}{2k}\right\} \sim x_k^2$$

$$\hat{\Delta}adj = \sqrt{N}\left\{\frac{N^{-1}S - k}{v(T,k)}\right\} \sim N(0,1)$$

In both equations, N is the number of horizontal cross-sections, S is the Swamy test statistic, k is the number of explanatory variables and v(T,k) is the standard error. The null hypothesis of the Delta test: H_0: $\beta_1=\beta$ implies that the slope coefficients are homogeneous, while H_1: $\beta_i\neq\beta$ implies that the slope coefficients are not homogeneous. The results of the Delta homogeneity test are presented in Table 3 below.

Tablo 3. Delta Homogenity Test

Delta Test	Statistics	P value
Δ	7.529	0.000*
Δ_{adj}	8.307	0.000*

* denotes statistical significance at 1% level.

As previously mentioned, the H_0 hypothesis assumes that the constant and slope parameters are homogeneous, while the H_1 hypothesis assumes they are heterogeneous. The results of both the Delta and corrected Delta (Delta tilde) tests led to the rejection of the H0 hypothesis, indicating that the parameters are indeed heterogeneous. The homogeneity or heterogeneity of the constant and slope parameters is crucial in testing the causal relationship between the series. If the results of the delta test indicate that the parameters are heterogeneous, the Dumitrescu-Hurlin (2012) test, one of the second-generation panel causality tests, is applied.

The Dumitrescu-Hurlin causality test establishes a model within the i=1.....N and t=1.....T for each unit with stationary x and y values (Dumitrescu and Hurlin, 2012:1451). In this context, causality is represented by the following equation

$$Y_{it} = \alpha_i + \sum_{k=1}^{K} \gamma_i^{(k)} Y_{it-k} + \sum_{k=1}^{K} \beta_i^{(k)} X_{it-k} + \varepsilon_{i,t}$$

Here $K \in N$ ve $\beta_i = \left(\beta_i^{(1)}, \ldots, \beta_i^{(K)}\right)'$ for simplicity, the individual effects α_i are assumed to be constant in the time dimension. Moreover, both individual conditions such as $y_{i,t}$ and $x_{i,t}$

of individual processes ($y_{i,-K},...,y_{i,0}$) and ($x_{i,-K},...,x_{i,0}$) are observable. The lag degrees K are assumed to be the same for all cross-sectional units of the panel, and the panel is assumed to be balanced. Moreover, the autoregressive parameters $y_i^{(k)}$ and the regression slope coefficients $\beta_i^{(k)}$) differ across groups but are constant over time. Dumitrescu-Hurlin causality hypotheses are established as follows:

H_0: $\beta_i = 0$ i=1,…..N

Under the assumption that β_i equals 0, the null hypothesis states that there is no homogeneous panel causality from variable x to variable y. The alternative hypothesis is;

H_1:$\beta_i=0$ i=1,…..N ve $\beta_i \neq 0$ i=N_1 +1,N_2+2,….N

According to the Dumitrescu-Hurlin causality test, there is no causal relationship from variable x to variable y, with an alternative hypothesis that N1 is less than N. N1 is unknown, but condition $0 \leq N1/N < 1$ must apply. If N1=N, this implies that there is no causality in all panel units, and this result has the same meaning as the null hypothesis.

When N1=0, variable x is the cause of variable y in all panel units. If the null hypothesis H_0 is accepted, variable x does not cause variable y in all panel units. However, if H_0 is rejected and N1 = 0, then variable x causes variable y for all units in the panel. These explanations provide results on the homogeneity of causality. If N1>0, causality is heterogeneous (Dumitrescu and Hurlin, 2012).

Dumitrescu-Hurlin panel causality test results are presented in Table-4, Table-5 and Table-6.

Table-4 Dumitrescu-Hurlin Panel Causality Test (CO2 and BIOCAP)

H0 Hypothesis	W-Bar Statistics	Z-Bar Statistics	P Value
CO2 → BIOCAP	14.4238	4.8600	0.0000*
Individual Results	Wald Statistics		P Value
Brazil	2.4021724		0.9021
Russia	16.037539		0.1892
India	53.13106		0.0201**
Indonesia	5.1131658		0.6602
China	8.83484		0.4126
South Africa	1.0242894		0.9872
H0 Hypothesis	W-Bar Statistics	Z-Bar Statistics	P Value
BIOCAP → CO2	14.1549	4.6840	0.0000*
Individual Results	Wald Statistics		P Value
Brazil	2.2788645		0.9121
Russia	10.018757		0.3581
India	56.541126		0.0176**
Indonesia	6.5982704		0.5459
China	7.0950648		0.5124
South Africa	2.3972856		0.9025

* and ** denote statistical significance at the 1% and 5% level, respectively.

Table 4 shows a bidirectional causal relationship between CO2 and BIOCAP variables. According to the country results, India has a bidirectional causal relationship between CO2 and BIOCAP. There is no causal relationships found in other countries.

Tablo-5 Dumitrescu-Hurlin Panel Causality Test (GDP ve BIOCAP)

H0 Hypothesis	W-Bar Statistics	Z-Bar Statistics	P Value
GDP → BIOCAP	8.9723	1.2912	0.1966
Individual Results	Wald Statistics		P Value
Brazil	3.5961395		0.7954
Russia	8.5913495		0.4251
India	3.7644059		0.7799
Indonesia	6.2758803		0.5689
China	20.621397		0.1261
South Africa	10.98463		0.3203
H0 Hypothesis	W-Bar Statistics	Z-Bar Statistics	P Value
BIOCAP → GDP	4.7430	3.3595	0.0008*
Individual Results	Wald Statistics		P Value
Brazil	0.07703826		0.9622
Russia	9.2151276		0.0226**
India	13.969297		0.0050*
Indonesia	0.08992106		0.9561
China	3.4571235		0.2030
South Africa	1.6496887		0.4526

* and ** denote statistical significance at the 1% and 5% level, respectively.

Table 5 indicates no causality relationship between GDP and BIOCAP, but a unidirectional causal relationship exists between BIOCAP and GDP at a 1% level. Based on the country-specific findings, a unidirectional causal relationship exists between the BIOCAP variable and GDP in Russia and India. The statistical significance of this causality is 5% and 1%, respectively.

Tablo-6 Dumitrescu-Hurlin Panel Causality Test (URB ve BIOCAP)

H0 Hypothesis	W-Bar Statistics	Z-Bar Statistics	P Value
URB → BIOCAP	9.0542	1.3448	0.1787
Individual Results	Wald Statistics		P Value
Brazil	11.219184		0.3119
Russia	7.4169667		0.4920
India	5.8711186		0.5992
Indonesia	8.5433375		0.4276
China	6.6829944		0.5400
South Africa	14.591613		0.2179
H0 Hypothesis	W-Bar Statistics	Z-Bar Statistics	P Value
BIOCAP → URB	1.5005	0.8668	0.3860
Individual Results	Wald Statistics		P Value
Brazil	1.1593294		0.2927
Russia	0.73004762		0.4016
India	0.03892631		0.8453
Indonesia	0.47885736		0.4958
China	2.7557816		0.1104
South Africa	3.8397993		0.0622***

*** denotes statistical significance at the 10% level.

Table 6 presents the results of the causality relationship between URB and BIOCAP. The findings indicate no causal relationship between the URB and BIOCAP variables. Based on the country-specific results, a statistically significant unidirectional causality relationship from BIOCAP to URB in South Africa was found at the 10% level.

Conclusions

Firstly, the inter-unit correlation relationship of the series in the panel data set was tested through the Breusch-Pagan inter-unit correlation test and the stationarity of the series was tested through

CADF panel unit root tests. It has been determined that a correlation relationship between the series exists and all the series include unit roots at level and become stationary in their first differences.

Subsequently, the Delta homogeneity test was performed. The homogeneity test results revealed that both the constant term and the slope parameters are heterogeneous rather than homogeneous and the analysis could be continued with second generation causality and vector error correction tests.

Finally, Dumitrescu-Hurlin Panel Causality Test, which is the final step of the analysis, was performed. Findings obtained from the panel causality test indicate; a bidirectional causal relationship between CO2 and BIOCAP variables detected, no causality relationship between GDP and BIOCAP detected, but a unidirectional causal relationship exists between BIOCAP and GDP and no causal relationship between the URB and BIOCAP variables. On the country-specific basis, India has a bidirectional causal relationship between CO2 and BIOCAP, a unidirectional causal relationship exists between the BIOCAP variable and GDP in Russia and India and a statistically significant unidirectional causality relationship from BIOCAP to URB in South Africa was found.

Nowadays, with the acceleration of social and economic developments, processes such as increase in welfare level, economic recovery and urbanization bring about various environmental deteriorations and negativities. These negativities, such as climate change, global warming and pollution, are increasingly destroying the environment day by day, threatening the sustainability of both social and economic life. Eliminating environmental degradation, solving environmental problems and leaving a more livable environment for future generations have occupied the agenda of policy makers, on the other hand, the academic community and non-governmental organizations also interested in this issue.

Particularly in developing countries, the desire for rapid growth and efforts to converge the level of economic welfare to the level of developed countries cause the rate of consumption of natural

resources to exceed the rate of production, and this rapidly reduces biological capacity. The first step to be taken to eliminate this situation, called ecological deficit, is to quickly implement environmental protection policies. In this context, environmental protection measures should be taken in the continuation of economic activities, the promotion of environmentally friendly R&D activities should be increased, and it is important to accelerate investment policies that allow the use of environmentally friendly renewable resources in production processes, especially in developing countries where advanced industrialization targets are pursued. In addition, in creating future projections, measures should be taken to increase this capacity as well as to protect the existing biological capacity. On the other hand, in order to increase social environmental awareness, social awareness should be created in coordination with regulatory authorities and non-governmental organizations.

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CHAPTER VI

Evaluation of Monetary Policy and Monetary Policy Shocks in Terms of Economic Doctrines

Sabiha OLTULULAR[1]

INTRODUCTION

In economic science, monetary policy and monetary shocks have an essential place both theoretically and empirically. In this context, in this section, monetary policy and monetary shocks are examined according to economic schools of thought and theoretical models. Along with studies on whether monetary policy affects real economic variables, the effects of expected and unexpected policies are also emphasized. In addition, theories that can help in examining monetary shocks and the direction of these shocks are also discussed. However, the effects of expansionary and contractionary monetary policy are not ignored.

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This study was prepared as a book with a part of the doctoral thesis.

While classical economics is nominally concerned with the stability of variables such as price, money supply, exchange rate, and nominal wage, Keynesian economics is more interested in the stability of real variables such as production, investment, and consumption. Monetarists are focused more on inflation. Neo Classical economists carried out their economic activities and theories using mathematical analysis and mostly used static equilibrium analysis methods for this. The "IS-LM" analysis put forward by Hick-Hansen has an essential place in macroeconomics. With this analysis, Keynesian analysis has been put into graphical language.

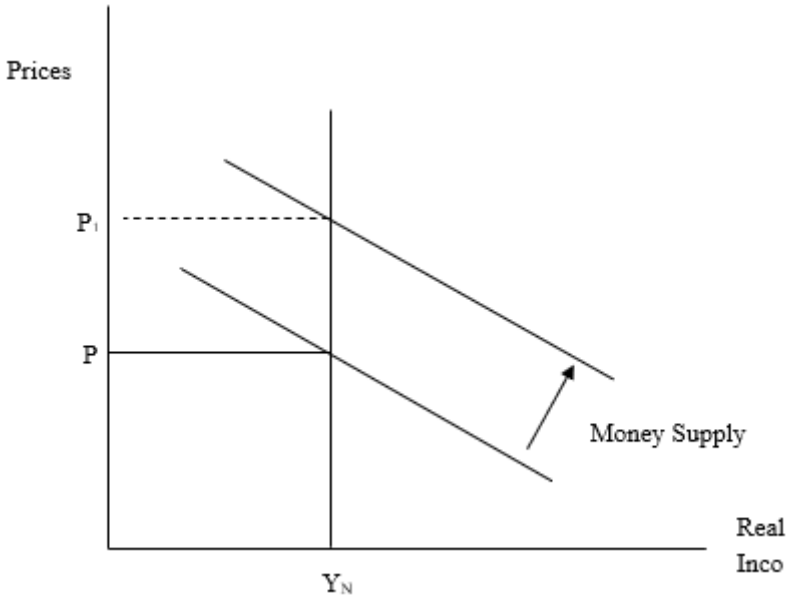
In the economic literature, it is accepted that monetary policy or monetary shocks have real effects, at least in the short term. Economic schools of thought, including Classical, Neo-Classical, Keynesian, Neo Keynesian, Monetarist, and New Keynesian, accept that monetary policy can affect the real sector in the short term, albeit for different reasons.

1. CLASSICAL ECONOMICS

Classical economics, which forms the basis of modern economics, is a supply-side theory. They developed Say's Law with the idea that every supply creates its own demand. The economy's locomotive is in total supply, and its wagons are in total demand. The most critical factor determining the size of total demand is total supply. If total supply increases, total demand increases; if total supply decreases, total demand decreases (Bocutoğlu, 2013, 112).

Classical theory accepts that money is neutral. It is argued that money does not affect real variables (such as employment production). The central bank cannot increase employment and production by increasing the money supply. It can only cause an increase in the general level of prices, that is, inflation.

Graphic 1: Determination of Price and Output Level in Classical Economics



Classical economics, which accepts money as an external variable, is of the opinion that when there is a change in total demand due to an external shock in the economy, prices will change because supply and demand will be equalized in the goods market (Graphic 1). Accordingly, in classical economic theory, aggregate demand determines the general level of prices.

Classical economists state that the market economy has its own internal dynamics and, therefore, shocks or fluctuations in the economy will not cause a permanent problem in the economic system; this will only be a temporary situation. For this reason, they argue that when such situations occur, the state does not need to intervene actively. They are of the opinion that when there is a demand shock in the economy, this problem will be resolved automatically in a short time, thanks to price and wage flexibility.

1.1. Monetary Policy in Classical Economics

In classical economics, money is unimportant and has no effect on real variables in the long run. In this system, money is demanded only for transactional and precautionary motives.

Classical economics attaches importance only to monetary policy as an economic policy tool. They emphasize that in case of an unstable economy, monetary policies should be preferred instead of fiscal policies. Financial instruments are actually considered as a tool of monetary policy. For example, increasing government spending means increasing the money supply. According to classical theories, if the assumptions of perfect competition, wage flexibility, and interest flexibility are realized, the economy will always and automatically reach full employment, every good produced will be sold, and imbalances such as stock increase and production inadequacy will disappear. Therefore, the general level of prices will maintain its stability without causing both inflationary and deflationary pressures. Thus, the invisible hand of the market will keep the economy in balance (Savaş, 1986, 35).

Although monetary policy is recommended instead of fiscal policy in classical economics, it is stated that the invisible hand of the market automatically brings the economy to full employment and that monetary policy will not have an effect on real output but can only have an effect on the general level of prices. According to classical quantity theory, the increase in money supply is directly reflected in prices. The main function of monetary policy is to limit the increase in money supply by consistently adjusting it with the real growth rate (Bofinger, 2001, 249).

According to K. Marx, business cycle fluctuations inevitably arise from the structure of the capitalist system and occur in periods of crisis when unemployment is at its highest (Hiç Birol, 2013, 4).

Until 1866, cyclical fluctuations were based entirely on harvest measurements influenced by weather conditions. William

Stanley Jevons[2] (1884) used the concept of business cycles in his analysis.

Marshall stated that the systematic fluctuations in the economy depend on the systematic mistakes banks make when adjusting the amounts of money and loans. For example, when the economy is booming, banks increase interest rates and reduce the amount of money and loans to prevent inflation. This could lead the economy into recession. In this case, first, the growth rate and then the real income level begin to decline and may cause a depression ($r\uparrow \rightarrow Ms\downarrow \rightarrow i\downarrow \rightarrow y\downarrow$). In case of depression and low income, banks increase the loan amount and reduce interest rates. In this case, first the investment level and then the production level begins to increase, and the economy regains its vitality ($r\downarrow \rightarrow Ms\uparrow \rightarrow i\uparrow \rightarrow y\uparrow$). It is possible to adjust business cycle fluctuations by the state and the central bank with money, credit, and interest rate instruments (Hiç Birol, 2001, 19).

Since classical economists believe that markets can come to general equilibrium on their own without intervening in the economy, they argue that imbalances are temporary. For this reason, the adjustment mechanism should not be intervened in the face of shocks that occur in the economy (Evans, 1969, 107).

[2] "According to William Stanley Jevons, regular sun spots affect natural conditions and cause fluctuations in agricultural production. The basis of the economic cycle lies in the cycle process of the appearance of sunspots. Climatic changes resulting from the spread and contraction of sunspots, abundance, and scarcity in the amount of harvest and agricultural production. will cause differences in the amount of output. Changes in agricultural output also affect all economic activities and create conjuncture fluctuations. Moore examined the relationship between the rotation of the planet Venus around the sun and the earth and the effect of the change in the amount of precipitation on the amount of agricultural production and, as a result, its reflection on product prices. According to him, the cycle length of agricultural production is eight years. While climatic changes explain cyclical fluctuations, the event is viewed in a cause-effect relationship. For Robertson and Pigou, fluctuations in agricultural production are important regarding general conjuncture movements" (Cebeci, 2010, 154).

1.3. Criticisms Made in Classical Economics

There are two main problems that economists could not solve in the fall of classical economics in the years following the Great World Depression (1929-1934). Unemployment and business cycle fluctuations. It seems that these problems are not emphasized enough.

Explanations attributing business cycle fluctuations to high workers wages are insufficient. The mechanism mentioned in the previous section (r↓→Ms↑→i↑→y↑) will not be enough to reduce wages or remove the conjuncture from depression periods.

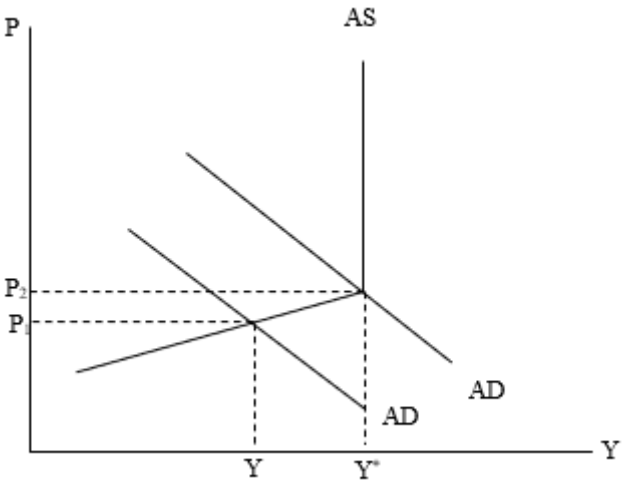
2. KEYNESIAN ECONOMICS

The Great Depression of 1929 dealt a heavy blow to classical economics and played an important role in the rapid spread of Keynesian economics. Experiencing an external shock such as the Great Depression of 1929 led to a financial collapse that would significantly shake the theoretical foundations of economics (Bocutoğlu, 2010, 5).

While Keynesian economic theory tries to explain the economy from the demand side, unlike the Classics, it argues that demand creates supply. The economy's locomotive is in total demand, and its wagons are in total supply. In the short run, the most important factor determining the size of aggregate supply is aggregate demand. For example, If aggregate demand increases, aggregate supply increases; If total demand decreases, total supply decreases (Bocutoğlu, 2013, 112).

Keynesian theory states that supply conditions are fixed in the short term and remain insensitive to economic policies in the long term; in other words, although it does not deny or neglect the importance of supply conditions, it states that these conditions remain outside the sphere of influence of economic policies (Savaş, 1986, 171).

Graphic 2: Determination of Price Output Level in Keynesian Economics



According to Keynesian theory, when the economy is in equilibrium at the level of underemployment, central banks can increase the level of employment and production by increasing the money supply without increasing the general level of prices. Therefore, monetary policy is effective. However, when the economy reaches full employment, Keynes accepts the validity of the Classical Dichotomy principle. According to Keynesian theory, when the economy is at full employment, monetary variables cannot affect real variables. Money is neutral, and monetary policy is ineffective on employment and production (Bocutoğlu, 2013, 112). In the Keynesian approach, in the analysis of economic variables, money is seen not as a passive variable but as an active variable that affects real variables.

2.1. Monetary Policy in Keynesian Economics

Seeing money as a tool that connects the present to the future, Keynes believes that it is not possible to prevent economic instability by using monetary policy tools. It is because the effects of monetary

policy policies, such as increasing or decreasing the money supply on effective demand, are not direct. If monetary authorities increase the money supply, this increase will occur when the authorities purchase bonds or bills from the market. The increased demand for bonds and bills will naturally increase their prices and reduce interest rates. The fact that interest rates have fallen will affect investments, and investments will affect total income and demand through the multiplier (Keynes, 1964, 171). In these processes, whether an increase in money supply will lead to an inflationary process depends on the current equilibrium employment level of the economy. If the economy is underemployment, increases in the money supply will increase both output and prices in accordance with the law of diminishing returns. If the economy is at whole employment level, increasing money will directly increase the general level of prices (Akdiş, 1996, 16). As a result, Keynes also stated that in cases where the economy is at full employment, increases in money supply will have completely inflationary results (Tuğcu, 2005, 44).

According to Keynes, the effectiveness of monetary policy is low during crisis periods. The fact that the interest elasticity of money demand is high and the interest elasticity of the marginal efficiency of capital is low limits the effectiveness of monetary policy on total demand. The expected demand-increasing effect will not occur because the interest elasticity of money demand is high, and the interest elasticity of the marginal efficiency of capital is low (Reynolds, 1988, 89). The decrease in interest rates due to the increase in money supply will have little impact on investment demand. Moreover, in the Keynesian view, the fact that investments depend on future expectations rather than interest rates limits the effectiveness of monetary policy (Tuğcu, 2005, 45).

The growth rate of the money supply has been accepted as an ineffective and unimportant tool in terms of influencing policy objectives (Keyder, 1991, 282). Keynesian economists argue that monetary policy cannot produce the desired results and state that the safest way to ensure economic stability is through fiscal policy,

carried out mainly by changes in public expenditures and tax rates. According to them, monetary policy cannot deliver what is expected from it and cannot achieve success in times of crisis (Ataç, 1999, 9). All of these are emphasized as evidence of the low effectiveness of monetary policy on economic stability (Tuğcu, 2005, 45).

The Keynesian view argues that monetary policy is ineffective for two main reasons. The first is the liquidity trap, and the second is the low interest flexibility of investments. The liquidity trap, which prevents the economy from spontaneously reaching full employment even if prices and wages are flexible, is the situation in which the power of monetary policy to affect interest rates disappears. At the same time, the sensitivity of economic units' money demands to interest is infinite, that is, the situation in which the interest elasticity of money demand is infinite. In other words, it has reached a stage where increases in the money supply cannot reduce interest rates any further. The existence of a liquidity trap reduces the possibility of implementing monetary policy due to the use of interest rates. On the other hand, if money demand is inelastic towards interest, the LM curve will be steep, and most of the predictions of Keynesian theory will be invalid.

Keynesian view argues that the interest elasticity of investments is low. Low elasticity means that a one-unit change in interest rates will affect investments of less than one unit. In this case, monetary policy will not be effective.

According to Keynesian theory, expected or unexpected changes in total demand have the greatest impact on real production and employment, not on prices. According to the Keynesian view, since nominal prices and wages are rigid, the source of fluctuations in production are large fluctuations in nominal aggregate demand. These fluctuations have real effects. At the same time, the inflexibility of prices and wages causes real effects of nominal shocks. In this case, some economists accept that both expected and unexpected monetary policies have real effects (Ball, Mankiw and Romer, 1988; Blinder, 1987). However, while accepting the

neutrality of money, no distinction is made between short and long term.

In the Keynesian approach, it is thought that monetary policy can affect the economy, even to a small extent, and the most important factor is interest rates. Monetary policy affects the economy by affecting investment expenditures and, therefore, total demand through interest rates.

As a result, according to Keynes, the most effective way to achieve full employment is fiscal policies. Monetary policy (increasing the money supply) is less effective and can only be used as a secondary policy tool. When the money supply is reduced, spending decreases, and demand falls. Since prices and wages are inelastic and do not fall instantly, the decreasing level of spending leads to decreased production and layoffs of workers (Mankiw, 2004, 778-780).

2.2. Keynesian Business Cycle Theories

Between 1940 and 1970, business cycle analysis was dominated by Keynesian models. During this period, it was believed that the basic assumptions of classical economics were not consistent with the observed cyclical fluctuations. Under classical conditions, since the aggregate supply curve is vertical, fluctuations in demand affect only prices, not output. Therefore, many economists have assumed that the business cycle emerges due to a combination of fluctuations in aggregate demand and Keynesian aggregate supply conditions (Taban, 2001, 45).

Keynesian economists consider cyclical movements as a part of the economic system with ups, downs, peaks, and turning points. They were more interested in effective demand, savings, investment relations, and the accelerating effect. It is thought that the total effect of the multiplier and the accelerator on each other is responsible for the periods of contraction and expansion of the conjuncture (Eyskens, 1968, 9).

Keynesian business cycle theories argue that the most important factor causing economic fluctuations is investment expenditures. Keynes argued that investment decisions depend on investors' expectations about future sales and profitability, but these expectations are unstable. However, the high volatility of expectations is due to the fact that the events that shape the future are uncertain, and it is not possible to predict them completely. Keynes assumed that fluctuations in investment would change aggregate demand and, therefore, aggregate supply. Because assuming that nominal wages are rigid, nominal wages will not change in response to changes in aggregate demand, fluctuations in aggregate demand affect not only prices but also output. According to Keynesian theory, another factor that causes cyclical fluctuations is changes in the inflation rate. Inflation moves in the same direction as total economic activity and tends to decrease during recessions. Since total demand will decrease, companies must reduce prices (Turan Koyuncu, 2009, 57).

Another reason for demand shock and cyclical fluctuations in the Keynesian model is that companies want to keep the amount of stock on hand at a certain level in order to meet unexpected demand increases. An unexpected decrease in the amount of demand will cause an unexpected increase in stocks, as it will reduce the production level. Conversely, an increase in demand will cause an increase in production quantity and an unexpected decrease in stocks (Turan Koyuncu, 2009, 57). Keynes tried to find the cause of cyclical fluctuations by associating investments with the psychological states of entrepreneurs. However, a change in the investment level cannot create a cyclical wave on its own.

Although Keynes carried out a short-term analysis of business cycle fluctuations, he was criticized for being unable to draw a long-term perspective, and his theory was not accepted as a complete business cycle theory (Paya, 2002). Although Keynes did not have a complete business cycle theory, a group of his contemporaries established a Keynesian business cycle theory using the main principles in the general theory.

N. Kaldor, P. A. Samuelson, J. R. Hicks, J. W. Angell, and A. Hansen are among the important economists working in this field (Eyskens, 1968, 10). The missing points of Keynes have been tried to be completed with Samuelson's multiplier-accelerator model. The multiplier-accelerator model assumes that the amount of capital is a proportion of output. If technology does not change, the increased level of demand can only be met by more significant capital investment. When technology does not change, the ratio of capital to output must remain constant. This constant is called the accelerator. In the multiplier-accelerator model, investment responds to changes in output, not to the level of output. It is this assumption that causes business cycle fluctuations (Cebeci, 2010, 185).

2.3. Shocks in Keynesian Economics

According to the Keynesian view, which is shaped by the positive short-run aggregate supply curve, the reason for the positive-negative shock asymmetry is price and wage rigidity. According to the demand-side asymmetry view, the reason for this asymmetry is inadequate information and existing imperfections in the credit market. According to this type of asymmetry explained by menu costs within the framework of the Keynesian approach, small shocks have stronger effects on macroeconomic variables than large shocks. Another type of asymmetry, defined as situation asymmetry, is that political shocks have different intensities depending on the recession and revival periods of the economy. According to this type of asymmetry, monetary policy shocks cause stronger effects in the recession period of the economy than in the recovery period (Ergeç, 2007, 2).

It is not easy to deal with supply shocks in terms of Keynesian stabilization policies. It is very difficult to try to recover revenue losses by applying monetary and fiscal policies. For this reason, some economists think that monetary and fiscal policies are inadequate in the face of supply shocks (Koyuncu, 2009, 68).

According to Keynesian economics, fluctuations in employment and production are largely due to fluctuations in

nominal aggregate demand. The reason why nominal shocks matter is that nominal prices and wages are perfectly inelastic.

In Keynesian economics, it is argued that wages do not change fast enough to bring the market into balance, and demand and supply shocks will cause large real effects on production and employment in the economy (Snowdon, Vane and Wynarczyk, 1996, 288).

3. MONETARIST ECONOMICS

The oil crisis that emerged in the early 1970s was an important factor in stagflation. During this period, the inadequacy of Keynesian policies in dealing with the problems reduced the influence of Keynesian theory, and according to R. Lucas, Keynes no longer existed. In a way, it can be said that in the 1960s, the Keynesian paradigm was attacked by M. Friedman, who developed the Monetarist theory based on the Classical tradition. The Classical revival movement, which started with Friedman's Monetarist theory, formed the important building blocks of macroeconomics with the new Classical macrotheory developed by Lucas.

In monetarist theory, monetary factors have an important place. They argue that monetary growth can affect economic factors and that money is biased in the short run. This short period is longer than the short period defined by the Classics.

According to Friedman, money is biased in the short run, and increasing or decreasing the money supply increases employment, production, and monetary national income by creating money deception among workers in an economy close to full employment. However, the demand for a monetary wage increase due to rising inflation expectations of workers waking up from the money deception causes firms to cut production, reduce employment, and the economy to return to the old equilibrium level on the long-term Phillips curve. According to Friedman, money is biased in the short term but neutral in the long term (Bocutoğlu, 2010, 5).

Monetarists consider the money supply as an essential indicator in determining economic performance. The increase in money supply (monetary expansion) affects production in the short term, causing a temporary increase in the level of national income. In the long run, it affects the general level of prices, not actual production.

Friedman argues that in the event of unexpected inflation, there will be a tradeoff between inflation and unemployment in the short term due to the slow adjustment of individuals' inflation expectations. However, it is stated that such a tradeoff will disappear in the long run, as individuals will not be constantly wrong. Therefore, authorities state that if they try to keep unemployment below the natural rate, they can only do this in case of actual inflation that exceeds the inflation expected by individuals (Yay, 1996, 1).

3.1. Monetary Policy in Monetarist Economics

Based on the interest elasticity of money demand, Keynesian economics emphasizes that monetary policy cannot have a significant effect on total demand, and therefore fiscal policy should be used to solve economic instabilities. However, Friedman's assertion that money demand could be determined by variables other than bonds refuted the Keynesian theory in question. According to monetarists, the most important policy that should be used in resolving economic instabilities is monetary policy. According to monetarists, the role of monetary policy in ensuring and disrupting economic stability is quite large. Money supply is the most important factor affecting the level of nominal income. Suppose the interest elasticity of money demand is low and the interest elasticity of the marginal efficiency of capital is high. In that case, changes in the money supply are directly transmitted to the economy. According to monetarists, an increase in the money supply above the required level causes inflation, and an increase in the money supply below the required level causes a recession. As long as a stable increase in the money supply is achieved, economic imbalances will disappear (Tuğcu, 2005, 55).

According to the monetarist view, the free market economy is stable, and this stability continues as long as there are no state-induced demand shocks. However, the market economy cannot offer a solution to some instabilities. In such periods of instability, the "fixed rate monetary growth" rule, which is a kind of monetary policy approach, should be applied (Friedman, 1968). The policy proposal put forward by the rule in question has been one of the most important contributions made by Monetarists to macroeconomics (Tuğcu, 2005, 56).

It is possible to explain why Friedman suggested this type of policy as follows (Parasız, 1997, 408):

"Expansionary monetary policy to be implemented against a moderate recessionary process will increase economic instability. It is because the delay between the moment when monetary action is desired and the moment when its real impact on the economy will be felt will have an effect of increasing instability. Even if monetary authorities fully foresee the moment of the onset of economic recession, monetary expansion may not take effect until the revival phase of the conjuncture. Therefore, if expansionary monetary policy takes effect at a time when the economy is heading towards full employment, inflationary pressures will inevitably increase. If monetary authorities try to reduce inflation by contracting the money supply, this time, it will last 12-18 months. A money shortage will occur in the economy, and as a result, the recessionary process in the economy will accelerate.

Monetarist economists have argued that monetary policy will affect total demand not only through the interest rate and investment expenditure channel but but also through many different channels. According to these economists, there is a weak relationship between nominal interest rates and investment expenditures. There are no restrictions regarding the mechanism by which monetary policy affects the economy. In these models, a change in money supply can affect total demand in many ways, so that monetary policy can affect the economy through many different channels. Monetarists

considered the relative prices of other assets and wealth in the mechanisms by which money affects the economy. Among these transfer channels, foreign exchange, bonds, and stocks come to the fore. However, since Monetarists argue that transmission mechanisms will change throughout different conjuncture periods, a specific transmission mechanism has not been adhered to (Ergeç, 2007, 25).

Friedman explains why politicians make mistakes with the help of the improved Philips curve. According to Friedman's assumption, economic units determine their expectations according to their experiences and revise and adjust them in each time period. This is shown mathematically as follows:

$$P_t^e = F(P_{t-\lambda}) \qquad \lambda \in \{1, 2, \dots \dots \dots\}$$

Here, P_t^e refers to the expected inflation rate at time t, and $P_{t-\lambda}$ refers to the inflation that occurred in the past. In this case, if the government uses monetary expansion to reduce unemployment under adaptive expectations, the increase in the money supply increases aggregate demand, which in turn increases inflation along with consumption and investment. If individuals estimate current inflation, expected inflation will equal the actual inflation rate, and as a result, the unemployment rate will return to its original level. For this reason, Friedman states that monetary policy will not have a real effect in the long run (Filho, 1996, 67). If policymakers expand the money supply at a steady level over time, the economy will tend toward a steady inflation rate and a natural employment rate. In this way, the economy always remains balanced at whole employment level in the long run (Tuğcu, 2005, 58).

In conclusion, it is possible to say that monetary policy has an effect on real and nominal variables in the short term and on nominal variables in the long term. Since the market mechanism has the power to balance itself, there is no need to implement monetary policy to stabilize the economy. If the market mechanism is not working correctly, then monetary policy can be implemented. The effectiveness of monetary policy implemented solely to ensure price

stability is exceptionally high. It is also stated that the effect of monetary policy on the economy is more significant than fiscal policy.

3.2. Business Cycle Theories in Monetarist Economics

The Keynesian view was insufficient to explain the sources of cyclical fluctuations in the high inflation and unemployment environment of the 1970s. Economic activities could not be managed effectively with the Keynesian monetary and fiscal policies implemented then. In addition to being unable to develop a very effective cyclical theory, the Keynesian view argued that cyclical fluctuations resulted from the market economy's own dynamics; that is, they were endogenous. The Monetarist view, which has come to the fore with its criticisms on this issue, states that the increase in the amount of money is the main source of fluctuations.

According to Friedman, the cause of business cycle waves is the unnecessary interventions of central banks in the economy through the monetary policy they implement. Therefore, central banks' manipulation of the money supply is the main cause of business cycle waves. An increase in money supply causes a cyclical expansion, and a decrease in money supply causes a cyclical contraction. In the long run, a low monetary growth rate can lead the economy into recession. Large changes in the money supply cause fluctuations in aggregate demand and real economic activities. The increase in money supply first affects total demand. When the growth rate of money increases, the real amount of money increases, interest rates decrease, and the exchange rate increases. This initial effect that appears in the financial markets automatically spreads to other markets. As the interest rate decreases, investment demand increases, and exports increase as the exchange rate increases. There is an increase in spending, and these spending increases create a multiplier effect, shifting the aggregate demand curve to the right with the increase in the growth rate of money. In the opposite case, a decrease in the growth rate of money shifts aggregate demand to the left and causes stagnation.

To prevent business cycle waves, transparent and reliable central banks are extremely important. Central banks must pursue a policy of monetary expansion equal to the growth rate of the economy, adhering to a principle called the constant monetary expansion rule. Other monetary policies ignite business cycle waves (Bocutoğlu, 2010, 5).

Friedman and Schwartz thought there was an important relationship between the money stock and business cycle fluctuations. Since governments (central banks) are the ones who determine the amount of money in the economy, the resulting cyclical fluctuations are non-market, that is, external (exogenous). In the cyclical theory of monetarists, the stimulus is the change in the amount of money accepted as external.

Monetarists point to monetary shocks as the source of instability in the economy, give secondary importance to real shocks, and think that real reasons are of little importance. According to monetarists, deviations in the GNP and natural unemployment levels determined by real factors are temporary. Monetary shocks occur because of voluntary policy decisions and institutional arrangements. As a result, Monetarists argue that in the absence of monetary shocks, fluctuations in the economy will not be large, without ignoring that all instabilities seen in a capitalist economy depend on the functioning of the market mechanism.

According to monetarists, natural income, The natural unemployment level is determined by technological developments, changes in the production function, investments, and similar real factors. Therefore, Monetarists describe one of the reasons for cyclical fluctuations as deviation from the natural rate[3].

[3] Monetarist economists have developed the "Natural Rate" hypothesis as an element of stability. The natural rate is a concept put forward mostly for unemployment and real income levels and shows the average value of these in the long term (Cebeci, 2010).

Post Keynesians do not believe that the central bank will fully control the money supply. The central bank cannot follow an active policy as it wishes and cannot fully exercise its powers in controlling the money supply. For this reason, Post Keynesians believe that the money supply curve is not an external policy tool or that the money supply curve is not vertical, as Monetarists think. Post Keynesians reject the Monetarists' view that the central bank is the boss of prices (Ecevit, 2001, 62).

4. NEW PERSPECTIVES TO CLASSICAL ECONOMICS

4.1. Neo Classical Economics

The Neo Classical movement[4], which entered economic literature from the second half of the 19th century, is also called "Marginalists". Neo Classical economics, which developed with the contributions of marginal benefit, Marshall's supply-demand graphs,

[4] The leading representatives of neo-classical economics are Hansen, Hicks, Kahn, Klein, Pen, Samuelson, and Schultze. The basis of neo-classical synthesis is the "IS-LM" analysis put forward by Hick-Hansen. The neo-classical synthesis accepts Keynes's views that the level of production and employment and economic fluctuations are determined by aggregate demand. Therefore, full employment depends on aggregate demand rather than the level of real wages. It uses models reduced to the relationships between a small number of macroeconomic variables in order to simplify policy practices in line with these views by making them precisely controllable and directable. Economists within the neo-classical synthesis agree that Keynes's General Theory is a special case of the Classical Theory, arrived at by introducing certain limiting assumptions to the Classical Theory. This view was later criticized by many economists and was called bastardized Keynesianism by Leijonhufvud." (Arın, 1987, Çakmaklı, 2005, 7)

"Many Austrian economists do not favor the use of mathematics in economics and even openly oppose it, as in the example of Mises. Accordingly, economic activity is essentially a part of purposeful human action. This behavior can be tested repeatedly under the same conditions in laboratories and can be put into mathematical formulas that will produce the same result." "It is not a thing. It is a phenomenon that is renewed every moment, does not repeat each other exactly, and needs to be rediscovered every day. Therefore, economic analysis should not be sacrificed to mathematics; mathematics should be excluded from economic analysis" (Acar, 2010).

and Fisher's monetary theory, is a school based on microeconomics. It attracts attention with its structure that distinguishes the financial sector from the real sector.

In Neo Classical economics, as in Classical economics, there is no need for the state to intervene in the economy. Say's Law of Flows, Quantity Theory, and the neutrality of money are also valid in this school of economics. Additionally, in this school, prices and wages are flexible in the long run.

Neo-Classical economists, who say that real variables in the economy (such as production, income, and employment) will not be affected by the amount of money, that is, money will not affect the economy other than price increases, state that the state cannot improve the economy by printing money, it will only cause prices to rise.

Neo Classical economists have used mathematical tools extensively. They have received criticism on this issue. Most of the Keynesian, Monetarist, and New Classical economists use mathematics very frequently in their economic analyses.

The two known explanations for the long-term adaptation process belong to Fisher and Wicksell. Fisher, like other Neo-Classical economists, accepts that even if there is a deviation from complete employment equilibrium in the short term, the balance will be restored automatically in the long term without the need for any intervention (Çakmaklı, 2005, 9).

Wicksell made important contributions to the theory in many aspects with the concept of money. The inclusion of the interest rate in the system has dramatically changed the processes by which economic variables influence each other, compared to the situation predicted by the quantity theory. According to Wicksell, quantity theory must be more expansive and adequate regarding explanatory power when applied to pure monetary economics. The quantity theory ignored banks and the deposit liabilities that banks issued as loans. Wicksell explained how monetary imbalance occurs in an

economy where credit and money or cash and deposits exist and how the adjustment to balance occurs with the "Cumulative Process" (Çakmaklı, 2005, 8). As the theory suggests, price changes do not occur directly but indirectly due to changes in interest rates. Another consequence of considering interest in monetary analysis is that money and money-related institutions come to the fore. The most important of these institutions are banks. The banking system is included in the analysis through the credit mechanism. Banking is important in Wicksell's theoretical model (Gunnar, 1939, 29). According to the natural rate of interest, any reaction given by the banking system causes a fluctuation in the markets, resulting from a change in the money supply of the interest rate. The first effect of fluctuation is seen primarily in the money market, and the latter effect is seen in the real markets (Peker, 2004, 24).

In addition to market interest rates, Wicksell also included the concept of the natural interest rate in his analysis. Wicksell defines two interest rates in the pure credit system without cash. It is the monetary interest rate determined by banks and the natural interest rate determined depending on savings and investment decisions.

Wicksell argues that in an economy where cash and credit exist, the difference between the two interest rates will disappear quickly. When the difference between the two interest rates disappears, price increases will not continue (Humphrey, 1997, 79).

The basis of changes in the price level is a savings-investment imbalance (Wicksell, 1898). According to Wicksell, if the monetary interest rate (r) is lower than the natural interest rate (ρ), individuals use more bank loans, and investments increase. If banks set r relatively higher than ρ, credit use and investments will decrease. In other words, whenever banks determine the monetary interest rate differently from the natural interest rate, there will be an imbalance between investment (I) and savings (S) (Özdemir, 2009, 9).

If the natural interest rate and monetary interest rate are equal, prices in the economy do not change; if the monetary interest rate is below the natural interest rate, the economy enters a cumulative inflation process. The reason for this is the fact that the increase in investments and other expenses at low interest rates can lead to inflation. On the other hand, if the monetary interest rate in the economy exceeds the natural interest rate, investments will decrease, and stagnation will begin in the economy (Öztürk and Durgut, 2011, 122).

According to Hansen, in addition to these contributions of Wicksell to monetary theory, there are some deficiencies in his theory. In Wicksell's theory, situations where the investment function is inelastic to interest and situations where the liquidity function is flexible are not considered. On the other hand, Wicksell did not take into account the circumstances under which interest policy might be ineffective and useless. However, he overestimated the power of the banking system in controlling aggregate demand and price levels through the interest rate (Peker, 2004, 25).

4.1.1. Monetary Policy in Neo Classical Economics

In Neo Classical, expansionary monetary policy does not have an effect on the income level, regardless of whether the flexible exchange rate system or the fixed exchange rate system is implemented. It appears to be different when compared to Keynesian monetary policy (Table 3.1).

Table 1: Expansionary Monetary Policy Possible Effects on Real Domestic Income Level

	In a Keynesian Economy (P and w are constant) Domestic Income Level		**In a Neo-Classical Economy (P and w are flexible) Domestic Income Level**	
	Fixed exchange rate system	Flexible exchange rate system	Fixed exchange rate system	Flexible exchange rate system
Monetary Policy	Does not change	Increase	Does not change	Does not change
Fiscal Policy	Increase	Does not change	Increase	Increase

Source: Kibritçioğlu, 1996

4.1.2. Business Cycle Theory in Neo Classical Economics

Wicksell, who thinks that banks have an important share in adjusting interest rates, states that the faulty plans of monetary institutions have an active role in business cycle fluctuations.

According to Solow's Neo-Classical Model, fluctuations in the economy are the result of growth. As a result of a shock, national income deviates from its trend temporarily and returns to its trend path after a certain period of time. Solow considered technological turmoil important as a source of economic fluctuation and measured the rate of technological progress. Solow argued that production would decrease during the contraction of the conjuncture as a result of external technological fluctuations and that production would increase during economic recovery (Fırat, 2012, 409). In short, Solow attributed economic fluctuations to growth and technological shocks.

According to Hawtrey, the cause of business cycles is largely fluctuations in credit volume. To prevent the instability caused by loans and the subsequent instability in economic activities, the central bank proposes open market operations, changing the

rediscount rate and changing the legal reserve ratios of commercial banks. Hawtrey argues that there may be other reasons for business cycle waves, but other reasons are unimportant and can be controlled with monetary tools.

4.1.3. Criticisms of Neo Classical Economics

According to Steve Keen, one of the advocates of post-autistic economics, Neo Classical economic theories that led to the emergence of the global economic crisis are not only wrong but also dangerous. Neo Classical economic practices trigger crises (Keen, 2009, 18). The policies proposed by neo-classical economics to solve the problems not only fail to solve the problems but may also lead to the problems getting deeper by breaking away from reality over time (Atik, 2009, 11).

Another issue that Neo Classical economists were criticized for was their extensive use of mathematics in their analyses. It has been claimed that they have moved away from economic science with fictional models that are far from real market functioning.

Post Keynesians have criticized the Neo Classics for incompletely interpreting and oversimplifying Keynesian theory. Post Keynesian growth theory almost completely rejects the basic tenets of Neo Classical growth theory. The policy prescriptions of Neo Classical growth theory are very poor compared to Post Keynesians. Since it does not take into account cyclical fluctuations, it focuses on measures neither to prevent stagnation nor to eliminate unemployment (Ecevit, 2001, 67).

4.2. New Classical Economics

As a result of the wrong policies implemented during the Vietnam War in the 1960s, budget deficits and inflation, especially in the USA, became uncontrollable. Keynesian policies implemented at that time began to be questioned. However, the constant increase in oil prices by OPEC in the 1970s, the limitation of oil production and sales, as well as the stagflation made the

discussion of Keynesian policies inevitable. Lucas and Sargent are among those who made these criticisms.

New Classical economics first emerged in 1961, when Muth formulated expectations in his article titled Rational Expectations and the Theory of Price Movement (Muth, 1961). Thus, the first foundations of the Rational Expectations Hypothesis were laid. New Classical economics took its place in economic theory with the Aggregate Supply Model, which Lucas created by combining the Rational Expectations Hypothesis with the natural unemployment rate, following Rational Expectations Hypothesis. New Classical economics can also be called the strict Monetarist view.

New Classical economists, who argue that markets can come to equilibrium spontaneously without the need for any intervention, explain where the word Classical for this school comes from. In this school, the assumption that prices and wages are flexible upwards and downwards explains where the word new comes from. At the same time, prices and wages are flexible and affect each other simultaneously. When there is any excess demand or excess supply, the markets will balance immediately, thanks to price elasticity, without any delay in between.

Friedman argues that in the event of unexpected inflation, there will be a tradeoff between inflation and unemployment in the short term because people's inflation expectations adjust slowly. However, he stated that such a tradeoff would disappear in the long run, considering that individuals will not be constantly wrong. At this point, Lucas criticizes Friedman in terms of adaptive expectations. Although workers with adaptive expectations may begin to slowly withdraw their labor when they see that their real wages are not increasing as they expected, they will always act with a delay because they will never be able to fully adjust to the new actual wage. According to Lucas, the adaptive expectations hypothesis is, therefore, incompatible with the natural rate hypothesis. The response of production to relative prices varies depending on whether the change in relative prices is temporary or

permanent. According to Lucas, the greater the change in inflation, the more difficult it is to receive accurate signals, the more difficult it becomes to evaluate relative prices correctly, and the less individuals react to price increases. As a result, the more variable inflation is, the steeper the slope of the Phillips curve will be, meaning that changes in the inflation rate will not affect unemployment.[5] (Yay, 1996, 2). In short, one of the important points in which the New Classical economic approach differs from Monetarism is that expectations are rational, not adaptive.

4.2.1. Rational Expectations Hypothesis

As its name suggests, this hypothesis, built on the concept of rationality, assumes that all decision-making units in the economy are rational and that these units have complete information when making decisions and can easily access it. They make predictions for the future by accurately analyzing the information they obtain, and they do not make systematic errors in these predictions. Although Keynes used the concept of expectation in this hypothesis for the first time, the concept of expectation in the rational expectations hypothesis differs from the concept of expectation used by Keynes. He touched upon the importance of individuals' forward-looking expectations in their investment decisions. After Keynes, Friedman also used the concept of expectation in his analysis, but the concept of expectation here differs from the expectation used by the New Classics. The expectation Friedman uses is an adaptive expectation. Economic units only take into account the past values of the relevant variable when creating their expectations. New Classical economists have criticized Friedman's adaptive expectations assumption.

5 "In the labor market analysis of the Rational expectations hypothesis developed by Lucas and Rapping, there is no difference in the reactions of the worker and the producer firm to unexpected inflation. While the worker supplies his labor according to the difference between the expected and current wages, the firm supplies goods according to the difference between the expected and current prices. " (Yay, 1996).

According to them, individuals' future inflation expectations must be a function of the realized value.

The rational expectations hypothesis of Barro (1978) evaluates the effectiveness of monetary policy in different outcomes depending on the expected and unexpected situations of policy implementation by economic units. While the unexpected increase in money supply has an impact on the economy, the expected monetary policy does not have any impact on the economy.

The rational expectations hypothesis is a hypothesis that argues that systematic error is zero; that is, individuals cannot be systematically misled. In this hypothesis, markets are in equilibrium while prices and wages are flexible. The assumptions of the rational expectations hypothesis are as follows:

• Individuals try to make good guesses. Individuals do not make systematic mistakes; even if they make mistakes, these mistakes are random mistakes. While businesses try to predict their profits, workers, and consumers also try to predict income and price levels.

• Individuals take precautions to avoid being deceived. When the government unexpectedly increases the money supply, workers will perceive this increase as an increase in real wages. When prices increase, they will realize that nominal wages increase, not real wages. Individuals will take precautions to avoid experiencing this shock again. When the money supply is increased, real output will no longer be affected (Wessels: Trans. Ünal, 2002).

According to the Rational Expectations Hypothesis, economic units reconstruct their expectations in line with information about the practices of central banks. Therefore, economic units rearrange their expectations in parallel with the changes in the practices of central banks. According to this hypothesis, when central banks do not fully disclose the policies they will implement to the public, that is, in case of uncertainty, these policies are successful and have a positive effect on output.

Therefore, in order for monetary policies to be effective, they must be implemented at a time when the public does not expect them (Karahan, 2006, 156 and Atay, 2010, 60).

4.2.1.1. Policy Ineffectiveness

According to New Classical economists, due to the existence of rational expectation, the policies determined by policymakers do not affect real values but change nominal values. This situation is called policy ineffectiveness. Barro tested the policy inefficiency proposition using a two-stage model and concluded that expected changes in monetary policy implementation did not affect unemployment (Barro, l977, 1978). Bellante et al. (1982) applied Barro's study to the British economy and obtained supporting findings (Bildirici, 1999, 38).

4.2.2. Lucas Aggregate Supply Curve

While Keynesian and Monetarist economists prioritize aggregate demand, New Classical economists prioritize aggregate supply. Lucas, who developed the aggregate supply curve, built this model around three assumptions. Markets are clearing, economic agents' expectations are rational, and economic agents do not have complete information about the economy.

Lucas brought together the incomplete information hypothesis and the rational expectations hypothesis. In Lucas' aggregate supply hypothesis[6], economic units with incomplete information cannot distinguish between total price movements and relative price movements and increase their real production in the face of an unexpected demand shock.

Considering that a single good is supplied in many different markets, the average price of this good in all markets is $\overline{P}_t$. where

[6] "Lucas combines three things in his model. These are: a) Friedman's natural rate, b) Phelps' separate islands, and c) Muth's rational expectation. The separate islands are used to explain missing information or constrain information. Individuals know local prices, but it is accepted that general prices will be known with a delay. In this sense, information about prices is heterogeneous" (Bildirici, 1999).

there are n markets $\overline{P_t} = \sum \frac{P_{it}}{n}$. The price observed in a single market consists of two elements. These are the average price level $\overline{P_t}$ and the relative demand shock for the single market (z_{it}). Therefore the price is as follows.

$$P_{it} = \overline{P_t} + z_{it}$$

Both the relative demand shock term and the average price level have a normal and independent distribution. The problem faced by the producer here is that both the average price level and the relative demand term depend on random shocks. When P_{it} increases, the producer does not know whether this increase $\overline{P_t}$is caused by z_{it} it. This situation is called the signal extraction problem. When producers expect a relative increase in product demand, they will simply increase their output. This situation can be expressed as follows (Taban, 2001, 54).

$$y_{it} = \overline{y_ı} + \beta[p_{it} - E(p_{it})]$$

Here, β denotes the relative price parameter and explains how strongly the output will react to this excess when the real price level in the local market is higher than the expected price level. $p_{it} - E(p_{it})$ expresses the difference between real prices in the local market and expectations in the local market. If the expected value of z_{it} is zero, $P_{it} = E(P_{it})$. That is, the amount of output supplied will equal the normal production level $\overline{y_ı}$. The expected price level is the weighted average of past values.

$$E(P_{it}) = (1 - \theta)p_{it} + \theta\overline{p_t}$$

When $E(P_{it}) = (1 - \theta)p_{it} + \theta\overline{p_t}$ equation is substituted into $y_{it} = \overline{y_ı} + \beta[p_{it} - E(p_{it})]$, the following equation is obtained. When all markets are collected and averaged, the Lucas total supply function is obtained.

$$y_{it} = \overline{y_ı} + \beta[p_{it} - (1 - \theta)p_{it} + \theta\overline{p_t}] = \overline{y_ı} + \beta\theta[p_{it} - \overline{p_t}]$$

The above equation expresses that increases and decreases above the natural production level in market i depend on the

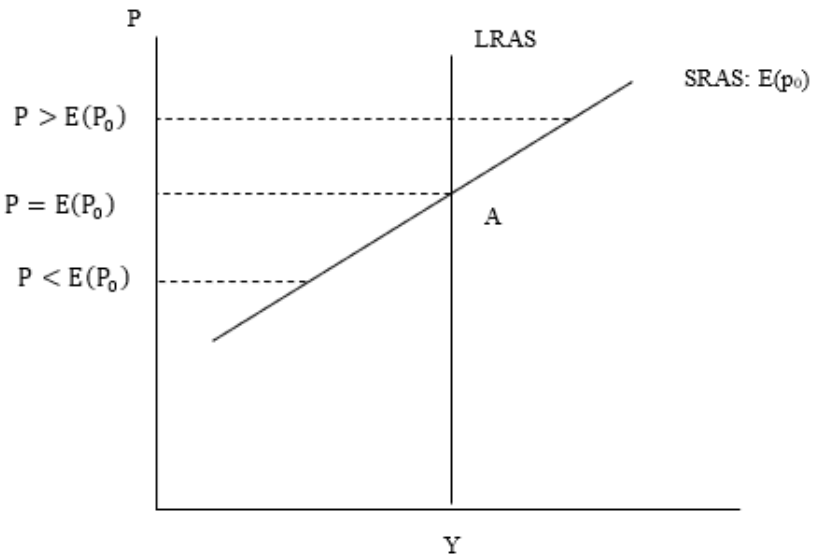
difference between the realized local price level and the average price level. When we collect all markets and average them, the Lucas total supply function is obtained (Pentecost, 2000, 349).

$$y_t = \bar{y_t} + \propto [p_t - \bar{p_t}]$$

$$y_t = \bar{y_t} + \propto [p_t - E(p_t)]$$

Here α is a positive parameter that indicates how strongly output will respond to this excess when the actual price level exceeds the expected price level. In a situation where the general price level (pt) is equal to the expected price level (E(pt)), output will be equal to the natural level of production (yt). This situation can be seen at point A in Graphic 3 (Taban, 2001, 60).

Graphic 3: Lucas Aggregate Supply Curve



The short-run aggregate supply curve (SRAS) is drawn based on the assumption that expectations about the general level of prices are given at P_0. If the expectations are that the average price level is P_0, it will be equal to the aggregate output level $\bar{Y}$ at point A. However, when the general level of prices is above the expected

prices, $P > E(P_0)$, the amount of output supplied is greater than the total employment output. When the general level of prices is below the expected level, the output supplied, $P < E(P_0)$, will be below the natural production level. An upward-trending aggregate supply curve is called a short-run supply curve because it can only be applied to short-run periods when expected prices do not change. In the long run, individuals become informed about prices, and expected prices conform to actual prices, that is, P=E(P). Since the general price level equals the expected price level, misperceptions disappear, and producers deliver total employment output. That is, in the long run, P=E(P) and $Y=\overline{Y}$. For this reason, long-term output supply is independent of the price level. In the long run, unless there is a shock, the total supply curve shows a structure parallel to the vertical axis at the level where output is equal to total employment output (Taban, 2001, 13).

In summary, in the New Classical model, where markets are constantly cleared, and decision-making units act rationally, price and output levels are always balanced at the whole employment level (Y) unless there is a surprise shock change.

4.2.3. Monetary Policy in New Economics

Lucas (1972) states that despite unexpected developments in the money supply, there will be no change in the real cash balance level, employment, and consumption volume (Minsky, 1993, 77). It also emphasizes a systematic relationship between the level of real output and the rate of change in nominal prices. Lucas states that this relationship shown in the Phillips curve arises from the illusion of money that this cannot be accepted and that all prices will clear the market, and all economic units will behave optimally in line with their own goals and expectations and form their expectations optimally. These views expressed by Lucas regarding the concept of money represent a return to the pre-Keynesian Walrasian General Equilibrium because any change that may occur in the money supply does not affect real variables (Peker, 2004, 85).

New Classical economists argued that predictable activist policies would not affect real economic variables in the long run. It is because the rational expectations that individuals have and shape their behavior enable economic units to foresee the effects of fiscal and monetary policies that may be effective in profit or benefit maximization. Therefore, the effectiveness of predictable economic policies is zero. It was previously stated that this situation is expressed as the "policy ineffectiveness hypothesis" in the literature (Reynolds, 1988, 299). In that case, the economy should be left to its own devices, and the state should not use monetary and fiscal policies to make fine adjustments (Tuğcu, 2005, 61).

If prices and wages have lost their downward elasticity, this is entirely a result of implemented activist policies. The flexibility of prices and wages can be impaired by minimum wage practices, public goods, and benefit regulations, regulations in the transportation industries, and support purchasing policies applied to the agricultural sector (Tuğcu, 2005, 61).

According to New Classical economists who adopt the rational expectation assumption, money is unimportant. Money is neutral in both the short and long term. Lucas expresses the neutrality of money as follows. If the factor driving the economy is purely monetary, current prices will be determined depending on proportional changes in the money supply. Money is neutral in the short run (Lucas 1972, 114). The short-term neutrality of money is determined by whether economic units can predict the change in the amount of money. If the change in the amount of money is predictable, money will not affect real variables in either the short or long run. However, if the change in the amount of money is unpredictable, money will affect real variables in the short term and will only affect nominal variables in the long term. Under unexpected changes in the amount of money, real cash balances, employment rates, and consumption will not change.

On the other hand, if the factors affecting the economy are completely real, the money supply will remain constant, and the

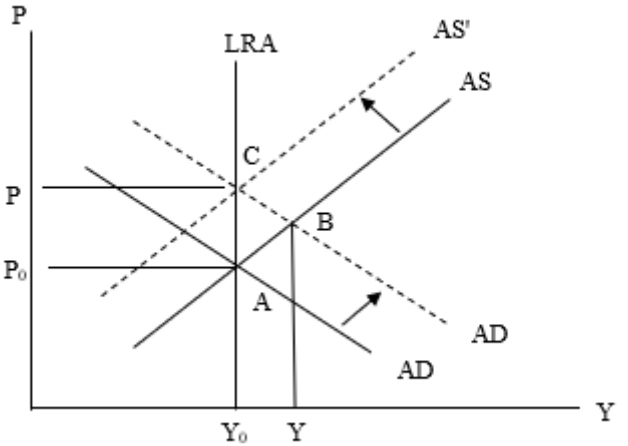
changes will produce some real results (Tuğcu, 2005, 62). According to New Classics, demand shocks originate from the real sector. Monetary policy is insufficient to affect demand shocks.

4.2.3.1. Effects of the Expected Expansionary Monetary Policy

In New Classical theory, since all prices and wages are flexible, increasing the general price level immediately causes wages to increase. It is because rational workers want their wages to increase at the same rate so that their real income does not decrease after the increase in the general price level. As a result of an increase in the general level of prices, the aggregate supply curve shifts to the left.

When the central bank pursues an expansionary monetary policy (increases the money supply), aggregate demand increases, and the aggregate demand curve (AD) shifts to the right. The economy gets from point A to point B. The general price level and total output increase. However, this increase in total output will not be permanent. The increase in the general price level is reflected in wages, and the aggregate supply curve shifts to the left. With monetary expansion, rational individuals readjust their wage or employment levels, considering that the AD curve shifts to the right. The general price level increases again, and total output returns to its previous level. The equilibrium point shifts from point B to point C. At the new equilibrium point, the economy returns to the natural product growth rate, indicating that expansionary monetary policy only increases the general level of prices. Economists advocating the rational expectations hypothesis, which attributes this situation to the ineffectiveness of economic policy practices, have argued that policies which increase the total demand level cannot affect the output level and that cyclical fluctuations are a pure supply-side phenomenon. That is, the economy is always in equilibrium at full employment.

Graphic 4: Effect of Monetary Policy Expected in New Classical Economics



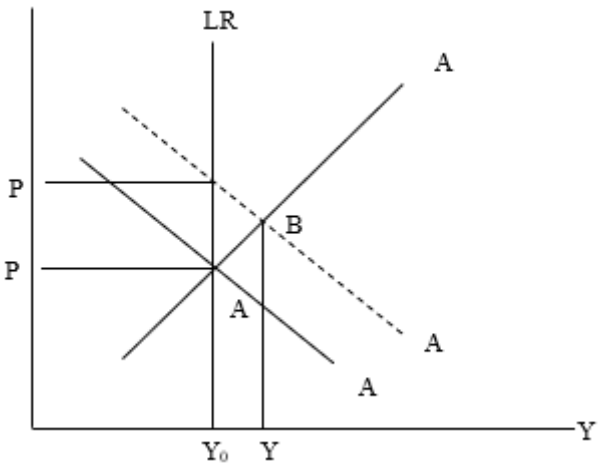
According to economists who defend the rational expectations hypothesis, since the AS curve is a steep curve, monetary and fiscal policy practices can only lead to fluctuations in the general level of prices (Graphic 4). This shows that in New Classical economics, the expected increase does not affect total output. This expected increase in the money supply only causes an increase in the general level of prices. This situation is called Policy Ineffectiveness.

4.2.3.2. Effects of Unexpected Expansionary Monetary Policy

If the central bank implements an unexpected expansionary monetary policy, the aggregate demand curve shifts to the right as aggregate demand increases. The equilibrium point shifts from point A to point B. The general price level and total output increase. Since there is an unexpected money supply, it will not be reflected in wages, and therefore, there will be no change in the aggregate supply curve. At the new equilibrium point, the economy operates above the natural product growth rate (Graphic 5). In this case, expansionary

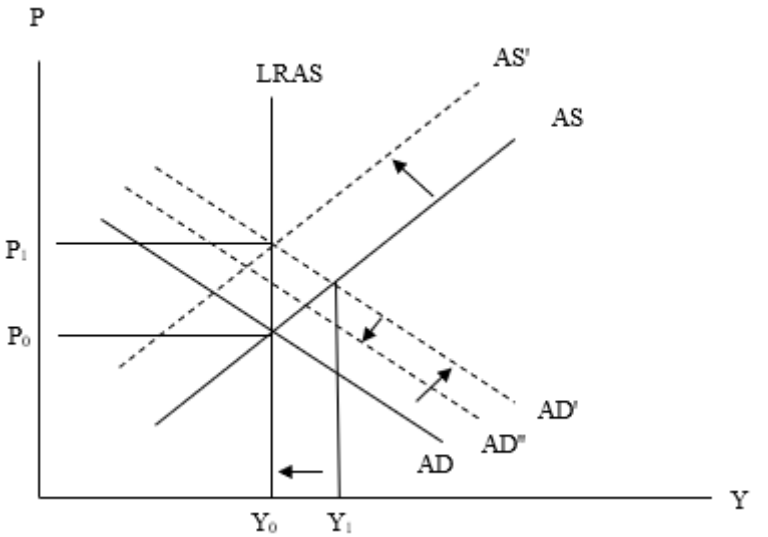
monetary policy increases both the general level of prices and output. It seems that an unexpected monetary policy has an impact on the economy.

Graphic 5: Unexpected Effect of Monetary Policy in New Classical Economics



Expansionary policies may reduce total output when a less expansionary monetary policy is implemented than expected or when economic decision makers make forecast errors. This policy could have a negative impact on total output. Economic units expect the central bank to increase the money supply by 20%, thus increasing the general price level by 20%. Thus, they demand a 20% increase in their wages, their demands are realized, and the aggregate supply curve shifts to the left. The shift in aggregate supply occurs as much as the expected change in aggregate demand. If the central bank decides to increase the money supply by 10% instead of 20%, the aggregate demand curve will shift to AD' instead of AD' since total demand will increase less than expected. Total output falls at the point where the new aggregate demand curve AD'' and the aggregate supply curve AS' intersect (Yalta, 2011, 173).

Graphic 6: Unexpected Effect of Monetary Policy in New Classical Economics



As a result, only unexpected monetary policies impact the real output level. According to the theory of rational expectations, decision-making units in the economy do not make systematic errors because they benefit from all available information when forming their expectations about the future. Unexpected money supply changes are not neutral in the short run.

4.2.4. Business Cycle Theory in New Classical Economics

The central bank's intervention in the money supply is the main reason for the formation of cyclical waves. An increase in the money supply causes a temporary cyclical expansion, while a decrease in the money supply causes a cyclical contraction. In order to prevent business cycle waves, it is necessary to create transparent and reliable central banks. Central banks must pursue a policy of monetary expansion equal to the growth rate of the economy, adhering to a principle called the constant monetary expansion rule. Monetary policies other than this will cause cyclical waves to occur.

New Classical economists, who attribute the cause of business cycles to central bank decisions that create dynamic time inconsistency, could not reach a consensus among themselves. The supporters of the New Classical School, consisting of E. Prescott, F. Kydland, C. Plosser, R. King, A. Stockman, S. Rebello, and R. Barro, left the New Classical School by attributing the cause of cyclical waves to the productivity changes caused by technological developments and they founded the New Classical real business cycle theory school (Bocutoğlu, 2012, 7).

There is no single Conjunctural Theory that New Classical economists agree on. While some see monetary shocks as the origin of fluctuations (Lucas, 1975; Sargent and Wallace, 1981), others (Kydland-Prescott, 1982) see real shocks as the fundamental cause. Although the New Classical Business Cycle Theory explained business cycle fluctuations first with monetary shocks and then with real shocks, the common point of the New Classical business cycle models is that they define business cycles as competitive balance.

While monetary factors can cause demand shocks in Keynesian approaches, monetary factors are the leading cause of demand shocks in Monetarists and New Classics (Atay, 2010, 59). At the same time, the fact that New Classical economists developed a balance theory to explain business cycle fluctuations is an important feature that distinguishes New Classical economics from Keynesian and Monetarist economics.

According to Lucas, the force that initiates cyclical fluctuations is money supply shocks. New Classical economics developed equilibrium theories using both the multiplier mechanism and the analysis tools of monetary shocks. The theory developed by Robert Lucas and based on incomplete information (misperception) states that in a perfect competition market, incomplete information will lead to cyclical fluctuations. In case of incomplete information, unexpected monetary shocks cause fluctuations in the production amount depending on the evaluation of these shocks by the decision-making units. Along with the fluctuations in the amount of

production, investment, employment, prices, and nominal interest rates also fluctuate. The source of the shock is shown as money supply shocks that finance public expenditures. As a result, according to Lucas, the short-term real effects of unexpected monetary shocks arise from incomplete information about the general level of money and prices. Suppose economic decision-making units cannot predict such money supply changes, which are made to stimulate total demand, using all the available information at their disposal. In that case, it will not be possible to determine whether the price movements are temporary or permanent, general or sectoral. This will create real effects. However, these real effects will not have any effect in the long term (Taban, 2001, 57).

Rational Expectations Business Cycle Theories, adopted by Lucas, Sargent, Wallace, and Barro, are based on the view that rational expectations determine monetary wages. Accordingly, if total demand tends to increase larger than expected, it will cause expansion; and if it tends to increase smaller than expected, it will cause recession. Edward Prescott (1986) investigated the differences in total factor productivity in his study on the US economy. He assumed that productivity was constant and varied exogenously. Kylans and Prescott (1982) considered technology and market shocks as the primary sources of fluctuations and adopted the stochastic growth model. Robert King and Charles Plosser (1984) stated that the money supply reacted to fluctuations externally and explained these fluctuations in money with real returns, not price fluctuations (Fırat, 2012, 409).

New Classical economics makes a distinction between expected and unexpected changes in the money supply and accepts that only unexpected changes in the money supply can have real effects. Real business cycle theory economists, on the other hand, accept that money is super neutral and adopt the Ricardo line (Özdemir, 2009, 8).

The main element that distinguishes the business cycle theory of rational expectations from other business cycle theories is

that this approach sees unexpected changes in total demand as the trigger of the business cycle (Şıklar, 2008, 524). According to rational expectations theory, an unexpected increase in aggregate demand increases real output, and an unexpected decrease in aggregate demand reduces real output. If the government predictably stimulates the economy, the policy will be ineffective; on the other hand, if it constantly surprises the economy, it will negatively affect output (Barro, 1978, 580).

3.4.3. Real Business Cycle Theory

The models of Barro, Lucas, Sargent, and Wallace, which explain cyclical movements with monetary shocks, have been criticized in many aspects. In addition, Finn E. Kydland and Edward C. Prescott (1982) and John Long and Charles Plosser (1983), who did not find Lucas's incomplete information theory sufficiently explanatory in explaining business cycle fluctuations, developed the real business cycle theory. Real Business Cycle Theory has suggested that the main cause of business cycle fluctuations is not unexpected policies but rather that business cycle fluctuations depend on random fluctuations in technology level, technology shocks, and productivity (Kydland and Prescott, 1990). Real business cycle theory is based on the following assumptions:

- Perfect competition conditions prevail in the economy, and the economy is always in balance at full employment. It assumes that markets are cleared, as accepted in New Classical economics.

- Companies and individuals aim to maximize their profits or benefits under technology and resource constraints.

- Since money is assumed to be neutral, monetary policy does not affect real variables such as employment and output. Real factors, not monetary factors, determine real economic decisions such as investment and consumption. Real business cycle theory argues that money has no role in fluctuations and that money is neutral in both the short and long term. Since Real Business Cycle Theory accepts that money is super neutral, changes in the money

supply do not matter to them. In real business cycle theory, it is stated that output depends on real factors, not monetary factors. Almost all real business cycle models do not include a monetary element. In their studies, Long and Plosser (1983) and Kyland and Prescott (1982) created real business cycle models by ignoring money (Koyuncu, 2009, 106).

There is no distinction between short and long term that monetarists accept. Growth theory and business cycle theory are combined. While growth theory is based on the long term, conjuncture theory is based on the short term (Koyuncu, 2009, 106).

Real business cycle theory explains business cycle fluctuations in the economy with real shocks (supply shocks) rather than monetary shocks (demand shocks). Real shocks: include new technologies, new products and changes in the quality of capital factors, bad weather conditions, the discovery of new raw material sources or price changes in raw materials, government regulations affecting production, etc. To summarize, real business cycle theory focuses on production and productivity shocks[7] (Gordon, 1993, 542).

According to the real business cycle theory, under the assumption of perfect information and elasticity of prices, a change in nominal or monetary factors cannot affect the real economy and does not cause business cycle fluctuations. Fluctuations in output, employment, consumption, investment, and productivity are all natural and individual responses to inevitable environmental changes. These fluctuations have nothing to do with monetary policy, rigid prices, or any type of market failure (Taban, 2001, 71).

[7] "Productivity shocks are the development of new products or production techniques, the introduction of new production techniques, changes in the nature of the workforce, changes in the availability of energy and raw materials, good or bad weather conditions, changes in government regulations affecting production, and any other factor that affects productivity. According to this theory, economic "Development results from positive productivity shocks, and recessions result from negative productivity shocks" (Taban, 2001, 71).

4.3.1. Monetary Policy in Real Business Cycle Theory

Economists who defend the real business cycle theory divide money into two parts. The first is the monetary base, which consists of the sum of cash in circulation and bank reserves. The monetary base is also described as "external money". The second is "internal money", which includes bank deposits. The amount of internal money is determined in the banking sector. According to real business cycle theory, the external quantity of money determines the level of aggregate demand. Since the aggregate supply curve in the economy is vertical, changes in aggregate demand only affect prices. Therefore, the most important factor that determines the price level in the economy is the monetary base, which is considered external money. In such a situation, the main task of the monetary authority should be to focus on controlling the price level. For this purpose, it is stated that running external money according to a certain rule (monetary growth rate rule) would be a suitable way to ensure price stability (Taban, 2001, 92).

Real business cycle theories advocate the ineffectiveness of monetary policy in reducing the effects of fluctuations in output. It is because, in real business cycle models, fluctuations in output result from individuals reacting to real shocks. Therefore, changes in the money supply to ensure stability will not affect the output level but will only affect the general level of prices.

Wachtel (1989) states in the real business cycle theory that following a monetary policy in the economy is costly and erroneous. The fact that money is super neutral makes the economic effectiveness of monetary policy zero in the real business cycle theory, and the policy implemented will not affect real variables, regardless of whether it is expected by individuals or markets or not.

4.3.2. Real Business Cycle Theory and Shocks

According to the real business cycle theory, the main reason for cyclical fluctuations is that the total supply affected by shocks moves the trend line up or down. However, shocks that can cause

business cycles can only arise from real variables. Changes in total supply that cause cyclical fluctuations also arise from shocks in productivity and technological shocks.

While surprises cause fluctuations in New Classical economics, the Real Business Cycle explains all fluctuations as fluctuations of potential output. Since it is accepted that changes in the amount of money do not have a real effect, the cause of the shocks is sought in real variables. Fluctuations in real variables are attributed to exogenous technology shocks. Real business cycle theory deals with supply-side shocks. While technological innovation leads to a change in demand, supply shocks include the development of new products or production methods, new production techniques, changes in the quality of labor and capital, the availability of raw materials and energy, weather conditions, government regulations affecting production and factors affecting production effect (Bildirici, 1999, 40).

4.3.3. Criticisms of Real Business Cycle Theory

Criticisms directed at the real business cycle theory can be grouped into three main groups:

1. Technological shocks

2. Money being super neutral

3. Empirical methodology

In real business cycle theory, technological shocks are seen as an important cause of economic fluctuations. Criticisms made in this respect are that technology shocks alone are not large enough to cause economic fluctuations and that most technology shocks affect only specific industries, not the entire economy. At the same time, these technological shocks do not produce the same results in each sector. In contrast, technological development is positive for one sector; it may be negative for another sector.

The second criticism of the real business cycle theory is the assumption that money is super neutral. Therefore, economic fluctuations are caused by real shocks, not monetary shocks.

The final criticism of real business cycle theory concerns the empirical methodology used in real business cycle models. Real business cycle models are estimated empirically through calibration practices. Criticisms focus on this method. According to criticism, no formal test statistics are used in the calibrated model. Recently, many alternative real business cycle models have been developed due to these criticisms. For example, in their research to respond to criticism, Kydland and Prescott (1991) reached findings that would allow calibration to be recognized as a scientific method (Taban, 2001, 99).

5. NEW PERSPECTIVES INTO KEYNESIAN ECONOMICS

5.1. New Keynesian Economics

As a result of the Monetarist tight monetary policy implemented in the USA and the UK until the 1980s, the state did not intervene much in the economy, and neither inflation nor unemployment decreased. This situation caused the policies of the Monetarist and New Classical schools to be questioned.

During this period, Keynesian policies came to the fore again, and the New Keynesian school of economics[8] entered the economic literature. Keynesian theory is based on the assumption of rigidity of prices[9] and wages, but no adequate explanation has been given as to why they are rigid. New Keynesian economics aims to

[8] It was named "New Keynesian" by Parkin for the first time in 1984. In New Keynesian Economics, Gregory Mankiw, David Romer, Olivier Blanchard, Robert Hall, George Akerlof, Laurence Ball, Stanley Fischer, Edmund Phelps, Bruce Greenwald, Asar Lindbeck, Jannet Yellen, Ben Bernanke, Dennis Snower, Hargreaves-Heap, James Tobin, Mc Callum et al. have contributed to the field.

[9] While the main nominal rigidity in the early Keynesian models was the nominal wage, New Keynesian models also emphasize price rigidity.

examine the price and wage rigidity advocated by Keynesian theory within the framework of microeconomic foundations in a way to eliminate the shortcomings of the theories processed in the supply side of the Keynesian model. New Keynesian economics explains short-run price and wage rigidity in detail. The reasons for this rigidity are labor contracts, effective wage hypothesis, menu costs, wage determination over time, coordination failures, and the hysteresis phenomenon[10].

New Keynesian economics is founded on the assumption that imperfect competition rules apply in markets and that markets are not fully clear. He combined the concepts of rigidity of pricesand wages with the rational expectations hypothesis. It is aimed to bring rationality to price rigidity.

According to Gordon (1990), the reason for wage rigidity is imbalances in the labor market. These are seen as efficient wages, contracts, and the insider-outsider hypothesis. The reason for price rigidity stems from imperfect competition in the goods market.

Because prices and wages are rigid, increases in aggregate demand can lead to increases in employment and output (aggregate demand, which is the main determinant of national income in the short run, increases total output). The slope of the short-run aggregate supply curve determines the price level. In an economy where prices are inelastic, money is also biased. New Keynesian economists think that even if individuals have rational expectations and foresee changes in the money supply, it is possible for changes in the aggregate demand level to have real effects.

[10] The phenomenon of Hysteresis, which explains that it is difficult for the economy to return to its previous position if it moves away from the equilibrium level as a result of any shock, has been used to explain the natural unemployment rate. Accordingly, if a temporary shock increases the unemployment rate and unemployment does not return to its previous level even though the shock disappears, the phenomenon of hysteresis exists. In this case, the natural unemployment rate rises as a result of the temporary increase in unemployment (Yalta, 2011).

Gordon (1990) emphasizes the distinction between nominal and real rigidity in New Keynesian economics. Nominal rigidity is caused by the relative inertia in nominal prices when nominal demand changes. The reason for real rigidity is that a price cannot adjust or partially adjust to changes in other prices. While explanations for real rigidities in the goods market include consumer markets, inventory models, and mark-up theories under imperfect competition, real rigidities in the labor market include implicit contracts, efficient wages, and insider-outsider models.

In New Keynesian economics, changes in total demand (AD) will show their effects on the equilibrium of the economy on real income (y) and employment level (N) rather than showing their effects as price (P) changes.

New Keynesians, who reject the idea of neutrality of money in the short term, advocated by the New Classical view, accept the view that money is biased in the short term and neutral in the long term. However, New Keynesian economics accepts Monetarism and rational expectations approach in the long run.

Mankiw and Romer (1991) stated that an economist can be considered a Monetarist when they believe that changes in the money supply are the main source of fluctuations in aggregate demand and a New Keynesian when they believe that microeconomic disruptions lead to macroeconomic price rigidities. Monetarists accepted that fluctuations in the money supply had real effects but did not explain price rigidities. Mankiw and Romer (1991) stated that New Keynesian economics can also be called "New Monetarist Economics" (Fisunoğlu and Tan, 2009, 54–55).

Although New Keynesians are economists who see Keynesian economics as a school trying to bring it back to life, some economists think like Mankiw. According to Mankiw (1991), the New Keynesian economics of the 1990s resembles neither the Keynesian economics of the 1930s nor that of 1960s. According to Mankiw, New Keynesian economics is closer to David Hume's Classical Economics and even to Milton Friedman's economics

(Dixon, 2008). Although New Keynesian economics accepts the rational expectations hypothesis, it differs from New Classical Economics in that markets are always in equilibrium at full employment, and prices are determined. While in New Classical Economics, some companies take the price as given under perfect competition conditions and incomplete information, in New Keynesian Economics, companies are in a price determining position under imperfect competition conditions (Yıldırım et al., 2011, 169).

Asymmetries in upward versus downward adjustment of nominal variables are an element of the Keynesian model. In this model, he argues that prices, especially nominal wages, are more rigid downwards than upwards. Conversely, in the New Keynesian model, the degree of nominal rigidity is independent of the direction of pressure for price change. The distinguishing feature of New Keynesian models is that monopolistic competition with rigid prices is reflected in Real Business Cycle structures.

As a result, in New Keynesian economics, even if the money supply is stable, aggregate demand is unstable and is the main cause of fluctuations. If the total supply is flexible until it reaches full employment, changes in total demand cause changes in total production, not prices. While total demand increases to the whole employment level, prices remain constant, and production and employment increase.

5.1.1. Phillips Curve in New Keynesian Economics

Proponents of New Keynesian economics used the Phillips curve in their analysis. The New Keynesian Phillips curve and the Phillips curve as a hybrid New Keynesian Phillips curve were examined. In a sense, New Keynesian economics has effectively used both rational expectations and the Phillips curve and the rigidity of prices and wages in its analysis.

New Keynesian economists criticized the Phillips curve for examining only the relationship between the unemployment rate and

inflation and for not considering the interaction between consumers and firms (Fuhrer, 1995).

The New Keynesian Phillips curve, which shows the relationship between inflation and unemployment, assumes that firms determine prices and that all firms operate in a monopolistic competitive market and predicts that these firms act with the motivation of profit maximization when determining prices. When a shock occurs in the economy, prices cannot immediately return to their long-term equilibrium. The New Keynesian Phillips curve is a model in which time-dependent and rigid prices exist.

New Keynesian Phillips curve was criticized by Fuhrer and Moore (1995) and Ball (1991). Fuhrer and Moore argue that price rigidity does not depend solely on the output gap. Excluding price rigidity from the model shows that a very low trade-off rate is possible in the disinflation process. However, this situation does not overlap much with the disinflation processes observed in real life. Using the output gap as a measure of economic performance does not measure demand pressure in the economy very well. Although economic theory predicts that inflation is closely related to the output gap, findings from empirical studies[11] in this field show the opposite.

Negative supply shocks can cause a negative relationship between inflation and the output gap. Negative supply shock is expressed as a shift of the aggregate supply curve to the left due to a negative shock, such as bad weather conditions, resulting in a decrease in output and an increase in prices (Çamlıca, 2010, 20).

The hybrid New Keynesian Phillips curve was developed by Gali and Gertler (1999) based on Calvo's gradual pricing model. This curve expresses that the current inflation rate is a function of expected inflation, the one-period lagged inflation rate, and real

[11] Using US data, Fuhrer and Moore (1995), together with Gali and Gertler (1999), conducted empirical studies with US inflation and output gap data for the period 1960 – 1997, showing the existence of a negative output gap coefficient for the standard New Keynesian Phillips curve, contrary to economic theory points out (Fuhrer and Moore, 1999; Gali and Gertler, 1999).

marginal cost. In the model, companies are included in the analysis prospectively and retrospectively regarding their price adjustment behavior (Çamlıca, 2010, 23).

5.1.2. Monetary Policy in New Keynesian Economics

In the New Keynesian structure, where prices and wages are rigid, the markets cannot be fully cleared, and there is monetary bias at the level of underemployment, the demand policies to be implemented will impact the real production and employment levels. While the Keynesian approach recommends using demand-side policies to support employment, He recommended using wage stabilization or income policy for inflation. In the New Keynesian approach, while demand-side policies are primarily aimed at controlling inflation, wage stabilization policies are used to support employment. Another difference between New Keynesian and Keynesian approaches is that New Keynesian analysis focuses on nominal expenditures rather than real economic activity (Koyuncu, 2009, 91).

Another point that distinguishes them from Keynesian economists is that the majority of New Keynesian economists recommend the implementation of a stabilization policy. Keynesian economists believed that the increase in aggregate demand could be adjusted to target exactly this point through monetary or fiscal policies and that small deviations could be corrected immediately. This means that it is able to fine-tune the economy. New Keynesian economists stated that this situation is not easy and only coarse tuning can be made with the help of policies. However, it has been emphasized that fine-tuning can reduce problems compared to no intervention.

New Keynesian economists do not recommend a return to the discretionary, activist, and fine-tuning aggregate demand-side policies of the 1960s. Keynesian economics is getting closer to Neo Classical economics with New Keynesian economics. It can be argued that New Keynesian arguments justify rule-based policies, not a return to discretionary aggregate demand policies. New

Keynesian economists advocate "rule-based policies" instead of "discretion-based policies" (Hall and Mankiw, 1993, 3). It can be said that New Keynesians are closer to the New Classics than Keynes regarding their perspective on policies (Büyükakın, 2007, 33).

New Keynesian economists argue that the effect of monetary policies occurs not by affecting the amount of money individuals want to hold, as in the Keynesian approach, but by affecting the amount of available credit (Greenwald and Stiglitz, 1987, 23).

New Keynesian economists, who recommend implementing monetary policy, suggest that fiscal policy should not be implemented in political and economic terms[12]. New Keynesian economists, who see inflation as a serious problem and recommend only monetary policy to combat inflation, seem to agree with the Monetarists at first glance. While monetarists recommend increasing the money supply at a fixed or predetermined rate according to some criteria, New Keynesian economists, on the other hand, advocate reducing or increasing the money supply increase rate according to the trends regarding the emergence and severity of inflationary tendencies in the economy and to the extent of preventing this.

According to New Keynesian economists, money has a direct effect on the level of production. New Keynesian economists argue that it would be more rational to use interest rates as a monetary policy tool instead of money supply. Today, many central banks use short-term interest rates as a monetary policy tool.

In New Keynesian economics, it is possible to increase real income and employment, provided that some price increase is endured, through expansionary monetary policy that increases total demand in both the short and long term. Monetary policies are more

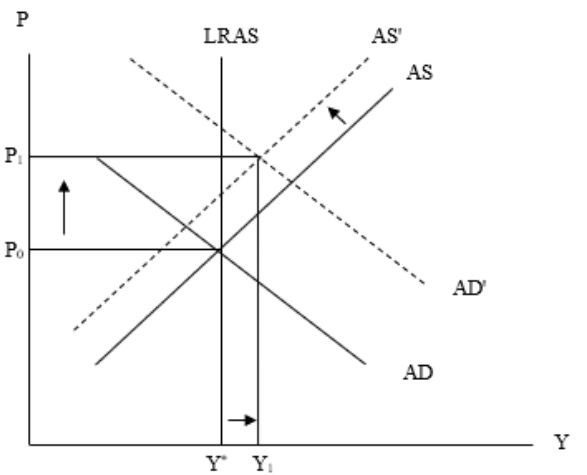
[12] New Keynesian economists recommend only monetary policy. Due to the change of fiscal policy, the laws must be firm and their indicators must take a certain time. This causes delays and this retrenchment fiscal policy may deviate from the target. In addition, it becomes difficult to constantly rearrange fiscal policy according to changes in aggregate demand. However, fiscal policy can raise interest rates and crowd-out private investment, which is a negative effect.

effective, especially in periods of stagnation (recession) at high income levels. According to New Keynesian economists, the price, real income, and employment-increasing effects of monetary policy that increase aggregate demand differ in the short and long term. Namely, in the short run, an increase in aggregate demand significantly increases real income and employment without raising prices. In the long term, prices rise more compared to the short term due to the change in price increase expectations in response to actual price increases. Increases in real income and employment decline. However, in response to some price increases compared to the initial period, real income and employment levels increase (Tuğcu, 2005, 72).

5.1.2.1. Effects of the Expected Expansionary Monetary Policy

According to New Keynesian economists, since prices and wages are rigid, increasing aggregate demand and the general price level in the face of an expansionary monetary policy does not change total supply at the same rate.

Graphic 7: Effect of Monetary Policy Expected in the New Keynesian Model

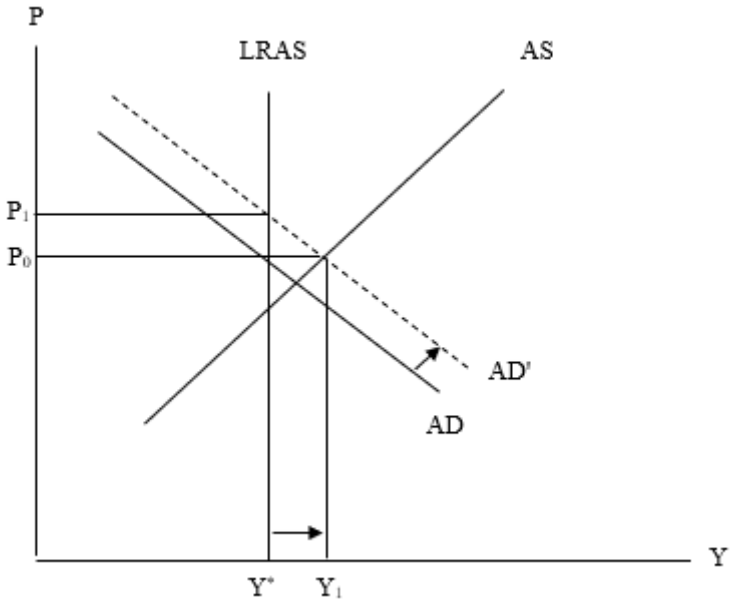


Let us assume that the central bank pursues an expansionary monetary policy (increases the money supply) when the economy is in short- and long-run equilibrium. As seen in Chart 3.7, aggregate demand increases, and the aggregate demand curve (AD) shifts to the right. The general price level and total output rise. Because wages are rigid, the wage increase is less than the increase in the general price level. Thus, the change in total supply is less than the change in total demand ($\Delta AS < \Delta AD$). The aggregate supply curve shifts to the left but does not intersect the aggregate demand curve at full employment. At the new equilibrium point, the general price level and total output increase.

5.1.2.2. Effects of Unexpected Expansionary Monetary Policy

If the central bank surprisingly implements expansionary monetary policy, aggregate demand increases, and the aggregate demand curve shifts to the right. The general price level and total output increase. Since economic units do not anticipate this increase in total demand, there will be no change in wages and no change in total supply. At the new equilibrium point, total output rises above its natural level.

Graphic 8: The Effect of Unexpected Monetary Policy in the New Keynesian Model



According to New Keynesians, money is not neutral. Money has a direct impact on production. Therefore, they advocate New Keynesian activist policies. According to New Keynesian economists, although both expected and unexpected policies affect total output, unexpected policies have a much greater impact on total output. The response of production to unexpected policy is greater than that to expected policy.

In New Keynesian economics, inflation is not considered to be directly monetary in origin. The reason for inflation is mostly is explained by cost increases such as wages, raw materials, and energy. According to New Keynesians, money supply is endogenous. Money supply is a function of wage increases, raw material prices, and energy costs. Expansionary monetary policy

may cause inflation if it is driven by wage increases, investment demand or consumption (Turan Koyuncu, 2009, 118).

Although monetary policy is not effective in some periods (such as the great depression), it is generally effective. The majority of Keynesian and New Keynesian economists recommend that the state prevent unemployment and soften business cycles by pursuing an active stabilization policy. New Keynesian economists support monetary policies that address fluctuations in the economy. In addition, many New Keynesian economists see activist interventions as necessary to eliminate market disruptions, especially during periods of volatility and recession. It is generally recommended that monetary policy be implemented based on rules (Yurtkur, 2012, 30).

5.1.3. Business Cycle Theory in New Keynesian Economics

Romer (1993) stated that when firms encounter small obstacles in imperfect competition and nominal price rigidity, these small obstacles can have huge macroeconomic effects and that real rigidities in the labor market increase nominal rigidities. As Romer stated, minor disturbances in the economy can lead to large and continuous fluctuations. Although price rigidity is seen as an important problem, the main cause of fluctuations is market failures in labor and capital markets.

New Keynesian economics sees unstable aggregate demand and supply as important determinants of business cycle fluctuations. Since prices and wages are not fully flexible in the short run, total demand does not follow a stable course. It is believed that short-run fluctuations in output and employment indicate deviations from the natural rate and these deviations occur because prices and wages are rigid. That is fluctuations in output and employment result from the slow adaptation of wages and prices to changing economic conditions. As a result, cyclical fluctuations are largely due to market failures.

According to New Keynesian economists, economic fluctuations and recessions, in particular, prevent markets from functioning effectively (Mankiw, 2004, 1). This situation may further deepen the instability. New Keynesians defend monetary and fiscal policy against cyclical fluctuations (Tuğcu, 2005, 71).

According to New Keynesian theory, both aggregate demand and aggregate supply shocks can lead to business cycles. The macro system is entire of coordination errors and externalities. Imperfect competition, heterogeneous workforce, and asymmetric information are other salient features of the macro system. Money is biased when the economy is under-employment and neutral when it is at full employment (Bocutoğlu, 2007, 7).

5.1.4. Shocks in New Keynesian Economics

New Keynesian economists generally accept that nominal and real shocks affecting aggregate demand will affect the real economy in the short term. However, supply and demand shocks also affect real variables, and demand and supply shocks are seen as potential sources of instability.

While instabilities in total demand were at the forefront in the 1970s, with the increase in oil prices in 1973-1975, changes in total supply and the impact of these changes on cyclical fluctuations began to come to the fore. New Keynesian economists also conducted studies on supply shocks.[13]

[13] Supply shock; These are situations that cause firms to change the total amount of output they want to produce at a given price level. Change in input costs, increase in the level of unionization that causes the total wage rate to change, and application of new technologies to production methods can be examples of supply shocks (Yalçınkaya Koyuncu, 2009).

Table 2: Economic Schools Using Rational Expectation

New Classical Economics	Real Business Cycle Waves	New Keynesian Economics
Rational expectation is valid. There is symmetric information.	Rational expectation is valid. There is symmetric information.	There is a rational expectation. There is asymmetric information.
Markets are open. The reason for deviation from balance is unexpected situations. Markets are open.	Markets are open. Supply deviates from equilibrium, especially due to the presence of technology shocks.	Markets are not open. Rigidities are important, especially in the short term.
The economy is not far from full employment.	The economy is approaching full employment.	The economy is far from full employment. Rigidities are very important. Hysteresis and NAIRU are very important.
They share the same view with Monetarists regarding the push and impact of the private sector. They attach importance to credibility.	They attach importance to supply-side policy and credibility.	Push and pull effects on the private sector are not present in either extreme case. Although it suggests supply and demand side policy, it is not in either extreme case.

Source: Bildirici, 1999.

5.2. Post Keynesian School of Economics

Post Keynesian school, which was born as a reaction to Neo Classical economics[14], is one of the important representatives of Heterodox economics. The Post Keynesian school gained official status by publishing the journal"Journal of Post Keynesian Economics" in 1978. Post Keynesian economics is a school based on

[14] While strengthened by Hyman P. Minsky, Paul Davidson, Sidney Weintraub in America and G. L. S. Shackle in England, Harrod's work on growth dynamics in the 1930s contributed significantly to the formation of Post Keynesian theory, which adopted a dynamic analytical approach.

the Cambridge school and accepts the main arguments of the Keynesian Doctrine. Post Keynesian economics, which deals with concepts such as uncertainty, unstable investment function, and money supply, argues that economies cannot spontaneously reach complete employment equilibrium even in the long run and that the general situation is underemployment equilibrium. He believes that the state's intervention in the economy is necessary in both the short and long term.

Post Keynesians aimed to revive Keynes' policies. According to them, Keynes has been misunderstood and misinterpreted. Those who understood Keynes best and revived his views were Post Keynesians. Post Keynesian view differs sharply from New Classical economics and New Keynesians in some points. Post Keynesians reject the Rational Expectations hypothesis, which is the basic principle of the New Classics and accepted by New Keynesians. However, although Post Keynesians use different methods, they often accept the policy proposals supported by New Keynesians. Although they use different methods, Post Keynesians often accept the policy proposals supported by New Keynesians (Parasız, 1998). Post Keynesian economics is one of the strongest approaches that oppose the Orthodox Theory (Ecevit, 2001, 35).

Williams and Findlay (1986) stated that in the Post Keynesian approach, the rational expectations hypothesis is unrealistic. In the real world, individuals do not use all available information when making future predictions based on past information.

While Monetarist and Neo Classical economics treat money supply as external, that is, under the control of monetary authorities, in Post Keynesian economics, the money supply is determined by the needs of economic life, basically as a result of the behavior of firms, individuals, and banks. So, the money supply is endogenous. Money supply is determined by money demand and is argued to be created by the economy's own dynamics, particularly the banking system. The primary source of monetary growth is the bank credit

system. The money supply is determined internally due to the actions of fund owners supplying funds and investors demanding funds (Tobin, 1963, 4).

Lavoie states that the money supply is determined through the relations between firms and banks, the relations between individuals and banks, and the relations between banks and the central bank, and therefore money is internal (Lavoie, 1992, 150).

As a result, Post Keynesians are concerned with studying an economy in disequilibrium. Post Keynesian school of economics analysis combines Keynes' theory in three aspects. The first of these is the role of money and finance in determining the amount of investment and production (effective demand). The second is business cycles and instabilities endogenously created by capitalism. Finally, Macroeconomic policies play an important role in affecting the course of economic development (Doruk and Şahintürk, 2010, 13).

5.2.1. Monetary Policy in Post Keynesian Economics

Post Keynesian establishes money as a means of connection between the past and the present and between the present and the future. There are different views among Post Keynesian economists regarding the effectiveness of monetary policy. Nicholas Kaldor and Basil Moore argue that unemployment cannot be reduced by monetary policy alone. Hyman Minsky and Paul Davidson, on the other hand, see monetary policy as an effective tool to reduce unemployment. Some Post Keynesians, who believe that monetary policy alone cannot solve the economic recession, think such policies will reduce growth in the long run. Because such policies reduce the growth rate and cause unemployment, monetary policy must be supported by income policy.

Arestis (1997) suggests controlling interest rates instead of controlling the amount of money supply, thus stating that monetary policy based on interest rates will be more effective. The primary goal of the central bank is price stability. It has been emphasized that

expectations are important when central banks implement monetary policy. The fact that central banks do not apply monetary surprises is an important factor in increasing the reliability of monetary policy. (Woodford, 2001, 19).

5.2.2. Business Cycle Fluctuations in Post Keynesian Economics

In Neo Classical economics, cyclical fluctuations are temporary, and the economy has internal dynamics that bring itself to equilibrium. In Keynesian and Post Keynesian economics, the economy does not have the dynamics to ensure a stable balance. The source of cyclical fluctuations in the economy is the tendency of entrepreneurs to finance their investments by borrowing. According to Minsky, the debts taken by entrepreneurs to finance their investments are the source of cyclical fluctuations. Regarding economic policies to ensure economic stability, Minsky emphasizes the ineffectiveness of traditional monetary or fiscal policies. According to Minsky, an effective stabilization policy is necessary to regulate the economy (Ergül, 2005, 32).

Post Keynesian economics considers both growth and cyclical fluctuation together. Post Keynesians consider growth as long-term and cyclical fluctuations as short-term. Post Keynesians emphasize the importance of investment and argue that as the investment growth rate increases, the growth rate will increase, and growth will spread to all sectors. Therefore, it is seen that they attach importance to investment as a concept that determines both the growth rate and cyclical fluctuations (Savaş, 1999).

Post Keynesian economists argue that cyclical fluctuations arise from the structure of the economy itself. Minsky's financial instability hypothesis, which makes a significant contribution to business cycle discussions, evaluates the source of economic instabilities and cyclical fluctuations as the financial system and even states that cyclical fluctuations and economic instabilities cannot be understood without taking into account the functioning of the financial system. Minsky claims that cyclical fluctuations cannot

be eliminated with a free economy and that financial fragility is a part of capitalist economies.

Minsky finds the measures to be taken in case of instability unnecessary. For this reason, institutions that can be effective against the instability problem, such as the central bank, apply economic theory and are satisfied with only limiting the money supply. Post Keynesians argue that central banks should take a more active role. Post Keynesian economists generally emphasize that the task of the central bank is to finance government expenditures and ensure the stability of financial markets (Wray, 1992, 12). The stability of financial markets is ensured by the final lending function of central banks (Aktop, 2010, 38).

Even if a stabilization program based on control of the money supply suppresses inflation, it leads to real shocks and fluctuations in the economy. At the same time, banks need to be examined more closely due to their effects on cyclical fluctuations and instability.

5.2.3. Uncertainty and Risk Concepts in Post Keynesian Economics

In post Keynesian economics, the concept of time is important. People live in a world where the past is known, and the future is unknown. Since the past cannot be changed and the future is uncertain, both the past and the future have significant effects on the present (Esen, 2007, 165).

Keynes gave importance to the problem of uncertainty by stating that the future is uncertain and incalculable. Tomorrow and the future cause both ignorance and incomplete information problems in Keynes. There is no perfect information, and very little is known about the future. In Keynes, uncertainty, like probability calculations, has meaning in Knight and cannot be measured. Uncertainty is not risk. According to him, measurable uncertainty (risk) ultimately represents certainty. This is no different from traditional economics.

In summary, in Keynes, the source of uncertainty is money. In a moneyed economy, money creates problems for the future. Tomorrow is a cause of uncertainty due to incomplete information and ignorance. The problem of uncertainty cannot be solved by taking money as a numerator, as in established economics, and by removing it from being a problem. It is because uncertainty is not an external but an internal variable (Eren, 2012, 6).

....."Keynes Without Uncertainty is Like Hamlet Without the Prince".....

Minsky

Post Keynesians have emphasized that the difference between risk and uncertainty is important. According to Lavoie, uncertainty is a situation in which the probability and value of an outcome are unknown, and the consequences that may arise from a choice are also unknown. Risk is the situation where each choice leads to a certain set of possible outcomes of known value, and each outcome is associated with a specific probability. Since probability calculations can predict risk, the risk can be eliminated or reduced, whereas this is not the case for uncertainty.

According to Knight, measurability is essential in risk and incommensurability in uncertainty. An important contribution of Knight is that the main factor that determines the decisions of economic decision-making units is uncertainty, not risk. This, when considered in parallel with Knight's belief that uncertainty cannot be a subject of systematic research, gives economics the identity of a science that "interprets" rather than "knows".

In game theories, there is generally risk (measurable uncertainty) rather than uncertainty because the probabilities are given. Post Keynesian economists have approached economic crises based on uncertainty, stating that the future cannot be known and the future cannot be calculated with probability calculations. Shackle, from the Post Keynesian school, is one of the names who do intensive studies on uncertainty, expectations, and time (Alada,

2000, 17). While Post Keynesians attach great importance to uncertainty, New Keynesians emphasize asymmetric information situations. In post Keynesian economics, it is impossible to know everything, and uncertainty prevails. New Keynesians think in parallel with orthodox economists regarding uncertainty. There may be uncertainty, but this will not be a problem, and uncertainty can be overcome with probability calculations.

In the Neo-Classical school, money is neutral and does not play any important role other than determining nominal prices. Money is treated as a variable determined by the government. Therefore, in this theory, the main function of money is as a medium of exchange. The Central Bank can control the money supply. In the Post Keynesian view, money is not neutral, and money has an important role in both the short and long term in capitalist economies in the context of historical time and in the presence of an uncertain future. According to Post Keynesians, money is a phenomenon determined within the economic system, not externally, as stated by the Neo-Classical view.

According to Post Keynesians, contrary to what Neo-Classical Economics Keynesians accept, the situation observed in real economies, even in the long run is imbalance. According to Joan Robinson, when balance is examined in a historical process, past and future together affect the process of achieving balance. In a world in balance, there is no difference between the past and the future. However, in a world where expectations do not come true, there is no room for balance; balance is just an analytical abstraction and is not possible even in the long run. In an uncertain world, the impact of expectations on economic events is enormous.

Moreover, the long term is not a future date but an imaginary situation that cannot be associated with the present (Robinson, 1973, 1-10). According to Robinson, the main reason for imbalances in the short term is the lack of a consistent and stable investment function because expectations are formed in an environment of uncertainty (Gram and Walsh, 1983, 537-550). In the long run, equilibrium is

determined by a number of institutional factors (such as income distribution, investment policies, wage policies, and financial conditions) that are difficult to achieve if expectations are not realized. It is difficult for these factors to achieve the necessary conditions for balance in the long run, and even if these conditions are met, it is entirely coincidental that the balance reached is entire employment balance (Sanal et al., 2010, 34-35).

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CHAPTER VI

Analysis of Individual Factors Affecting Unemployment Duration: The Case of Adana Province in Turkey

Halil Ibrahim KESKIN[1]

1.Introduction

Unemployment, which is a problem in many countries, is also one of Turkey's major problems. There are many reasons for high unemployment in a country. Some of them are the country's population, the population growth rate and age distribution, the distribution of sectors in the labor market, the conditions of the market, and the country's level of technology, the legal system and the volume of labor supply and demand. At the same time, the causes of unemployment differ in developed and underdeveloped or developing countries. In developing countries, hidden unemployment is generally observed. Because the unemployment

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problem in developing countries arises from the structure of the economy. However, the type of unemployment seen in developed countries is not due to the structure of the economy, but to the inability of the labor demand to keep the total labor supply working. Such unemployment is analyzed under the title of open unemployment.

The problem of unemployment can start individually and reach social dimensions. Unemployment has significant effects on the lives of individuals. However, it is important not only for individuals to be unemployed but also for the time they spend unemployed. Therefore, policies to reduce unemployment rates are insufficient. For this, some policies need to be developed. After an individual becomes unemployed, the effect of the duration of unemployment may be more than just being unemployed. When the duration of unemployment is prolonged, individuals may experience various psychological problems. In addition, the possibility of finding a job again after being unemployed is also an important factor. It can be stated that the low probability of finding a job again may also have significant effects on the individual (Arslan & Şentürk, 2018). Many studies so far have tried to explain the unemployment problem with macroeconomic variables and there are very few studies investigating the relationship between the duration of unemployment and individual characteristics in Turkey. However, there are also variables that affect unemployment on an individual basis. Therefore, both individuals and policy makers have a duty to shorten the duration of unemployment. In this study, the impact of macroeconomic factors is excluded from the research. Thus, the emphasis is placed on the effect of individual-specific factors.

This study aims to examine the reasons affecting the unemployment duration of individuals in the Adana province by using survival analysis methods. In the first part of the chapter, concepts related to unemployment, types of unemployment, causes and consequences of unemployment are given. In the second part, the employment and unemployment figures in Turkey over the years

are given and the policies implemented in the solution of Turkey's unemployment problem are given. Then, the literature review on the subject, the methodology section, where the analysis method to be used in the study is explained, and the findings section, where the findings obtained through the application of this analysis method are presented. Finally, the study will be completed with the conclusion section.

1.1.Unemployment Status in Turkey

In order to analyze Turkey's general situation regarding growth, unemployment and employment between 2000 and 2019, Table 1 is given. After the 2001 crisis, Turkey grew by about 7% until 2007. In 2007, the impact of the crisis that started in the US showed its main effect in Turkey in 2009. These crises led to an imbalance in production expenditures and consumption expenditures in Turkey and this imbalance caused unemployment and employment problems. Due to the 2007 crisis, Turkey lost its growth rate and shrank by 4.7% in 2009. After 2009, the country entered a growth period again. Although the unemployment rate rose to 14% during the crisis, this rate dropped to 9% with the growth process and unemployment rates were in single digits. However, since the increase in the employment rate and the increase in the amount of labor force were unbalanced, the unemployment rate increased considerably and exceeded the rate seen in 2000.

The drop in labor force participation rates underestimates unemployment. In fact, the main reason for the decline in the labor force participation rate is that individuals become hopeless during the job search period and as a result, they stop looking for a job even when they can find one (Aydemir, 2013).

Although the unemployment rate fell to single digit figures after 2010, this rate is around 9% and has seen double digit figures again as of 2015. In December 2019, compared to the same period of the previous year, the number of unemployed people in Turkey

increased by 92 thousand people to 4 million 394 thousand people. The unemployment rate rose 0.2 percentage points to 13.7 percent.

Table 1. *Annual Growth Rate and Employment Growth*

Year	Labor Force (Thousand)	Unemployment (Thousand)	Employment (Thousand)	Unemployment (%)	Employment Growth (%)	GDP Annual Change (%)
2000	23.078	1.497	21.581	6.500	-2.100	6.600
2001	23.491	1.967	21.524	8.400	-0.300	-6.000
2002	23.818	2.464	21.354	10.300	-0.800	6.400
2003	23.640	2.493	21.147	10.500	-1.000	5.600
2004	22.016	2.385	19.632	10.800	-7.200	9.600
2005	22.455	2.388	20.067	10.600	2.200	9.000
2006	22.751	2.328	20.423	10.200	1.800	7.100
2007	23.114	2.376	20.738	10.300	1.500	5.000
2008	23.805	2.611	21.194	11.000	2.200	0.800
2009	24.748	3.471	21.277	14.000	0.400	-4.700
2010	25.641	3.046	22.594	11.900	6.200	8.500
2011	26.725	2.615	24.110	9.800	6.700	11.100
2012	27.339	2.518	24.821	9.200	2.900	4.800
2013	28.271	2.747	25.524	9.700	2.800	8.500
2014	28.786	2.853	25.933	9.900	1.600	5.200
2015	29.678	3.057	26.621	10.300	2.700	6.100
2016	30.535	3.330	27.205	10.900	2.200	3.200
2017	31.643	3.454	28.189	10.900	3.600	7.500
2018	32.274	3.537	28.738	11.000	1.900	2.800
2019	32.052	4.394	27.658	13.700	-0.700	0.900

2.Literature

The literature review reveals that there are not many studies that examine the duration of unemployment in Turkey and include individual characteristics rather than macroeconomic variables in the analysis.

2.1.Some Studies in Turkey

Tansel and Taşçı (2004) used household labor force survey data for the 2000-2001 period obtained from the State Institute of Statistics and estimated the factors affecting unemployment in Turkey by considering log-logistic, log-normal and proportional hazard models. According to the findings, there are differences between regions in Turkey in terms of the duration of unemployment. According to the study, the probability of quitting a job decreases with the increase in the level of education.

Taşçı and Özdemir (2006) examined the factors affecting the long-term unemployment duration in Turkey and provided the data on the variables they used in the household labor force survey from the Turkish Statistical Institute (TURKSTAT). In their study, variables such as gender, marital status, region of residence, educational level, occupation and other variables were taken as determinants of long-term unemployment. According to the findings, being married reduces the probability of being unemployed in the long-term. It was found that the long-term unemployment duration was lower for individuals with high and low levels of education, but longer for individuals with middle level education. The long-term unemployment duration of individuals living in the Marmara and Aegean regions was found to be shorter than individuals living in other regions.

Tansel and Taşçı (2010) conducted a study on the determination of the probability of individuals transitioning out of unemployment by using data from the Turkish Statistical Institute (TURKSTAT) and conducted their analysis separately for male and female individuals. They used nonparametric and semi-parametric

analysis methods in their study. According to their findings, they concluded that unemployment in Turkey is similar to both developed and other developing countries.

Bulut (2011) examined the factors affecting the unemployment duration and used Cox Regression model as the method of the study and concluded that the most accurate model using the AIC-BIC criteria is the Cox Regression model with time-dependent explanatory variables for the multi-time single step function. The data used in the study are the data of individuals who were unemployed in Turkey in 2009, who applied to İŞKUR for unemployment benefits and who were entitled to unemployment insurance benefits. According to the findings, it is concluded that all the variables used are variables that affect the duration of unemployment, and it is found that the duration of finding a job is shorter for married individuals in the first two-time intervals, while the duration of finding a job is shorter for single individuals than for married individuals in the following periods. It is also concluded that individuals with higher education levels have shorter job finding periods than individuals with low and medium education levels for all time intervals.

Arslan and Şentürk (2018), in their study, tried to determine the individual factors affecting the duration of unemployment of unemployed individuals in Turkey. The data used in the study were collected through a survey conducted on individuals living in 15 provinces in different regions of Turkey. According to the findings of the study, it was determined that the unemployment duration of individuals living in regions with low unemployment rates was longer. In addition, while the increase in the age of individuals is a factor that prolongs the duration of unemployment, it is determined that individuals become unemployed in a shorter period of time with an increase in the level of education.

Erdem and Tuğcu (2012) analyzed the relationship between education and short and long term unemployment in Turkey for the period 1960-2007. According to the findings, they concluded that the

rate of unemployment increases as education increases in both the short and long run.

Karasoy et. al. (2015) tried to detect the factors affecting the unemployment duration with the data obtained from the Turkish Employment Agency. They investigated the factors affecting the duration of unemployment with the Cox Regression models. According to the findings obtained from the analysis, the Gamma regression model was found to be the best model and they concluded that the variables representing the gender, marital status, education level, and course taking status, province of residence and age of individuals are the factors affecting the duration of unemployment in Turkey.

2.2.Some Studies in Different Countries

Hunt (1995), in his study for Germany, analyzed the unemployment duration of unemployed individuals receiving social assistance and unemployment insurance by using the Cox Regression method. In his study conducted throughout Germany, he used the personal characteristics of individuals. Findings of the study indicate that the gender of the individual does not affect the duration of unemployment and that individual behaviors are more effective on the duration of unemployment than personal characteristics.

Denisova (2002) analyzed the duration of unemployment of individuals living in Vorenezh, Russia. By using the survival analysis method. In her study, she used the unemployment data of the Russian Federal Labor and Employment Agency between 1996 and 2000. According to the findings, it is concluded that the duration of unemployment of women is shorter than that of men. In addition, when women's education level, work experience and marital status are taken into account, it is seen that women have lower hazard rates than men, that is, the time they spend unemployed is less.

Danacica and Babucea (2006) investigated the duration of unemployment of individuals living in Gorj, Romania. In their study, they examined the duration of unemployment with gender, age and

education level variables. According to the findings of the study, they concluded that male individuals are more likely to be out of work than female individuals, an increase in age increases the duration of finding a job and an increase in the level of education shortens the duration of unemployment.

In their study, Kuhlenkasper and Kauermann (2008) analyzed the unemployment data and the average unemployment duration in Germany and the UK between 1995 and 2006 using life decomposition methods. According to the findings of the study, they found that the duration of unemployment is shorter for women living in Germany and unemployed individuals in the 26-44 age group find a job in a shorter period of time compared to those under 26 and over 45.

Borsic and Kavkler (2008) tried to determine how age, gender, education level and region affect the unemployment duration. They used the Cox proportional hazards model in their study. Findings of the study reveal that the duration of finding a job for the elderly unemployed is longer than the unemployed in other age groups. The unemployment duration of individuals with higher vocational training and university graduates was found to be shorter than that of individuals with a master's degree. It is also concluded that female individuals are less likely to find a job than male individuals.

Kauermann and Kuhlenkasper (2013) used data from the German socio-economic panel to investigate the factors affecting the unemployment duration in Germany. Since there are differences in the labor market in Germany in terms of gender and ethnicity, they followed a stratified approach. They used dynamic duration models to estimate the duration of unemployment. According to the findings, there are significant differences between ethnicities based on gender in the German labor market.

3.Survival Analysis

Survival analysis is the analysis method used to examine the time until the occurrence of a random phenomenon or event defined by the researcher. The duration of the random variable can be the time of breakdown of a machine part, the time of death of a patient or animal. The realization of the defined event mentioned here is expressed as failure (Sertkaya et. al., 2005)

The scope of survival analysis is very wide. It is an analysis method used to analyze many events in both natural and social sciences. For example, survival analysis methods are used to investigate events such as the fall of stocks in the stock market, divorce of individuals, birth, death, earthquakes, the beginning of a week. The analysis method is referred to by different names by researchers in applications in different fields. It is referred to as "event history" in sociology, "reliability theory" or "failure time analysis" in engineering, "duration analysis" in economics and "survival analysis" in clinical trials (Bulut, 2011).

3.1.The Kaplan-Meier Method

In methods using the Kaplan-Meier estimator (K-M), the survival time is similar to the life table. However, in the K-M method, calculations are made on individual data rather than on a frequency distribution table as in the life table. This feature allows the K-M estimation to be used for samples with a small number of individuals. Since the survival time is calculated for each death, patients who withdraw from treatment are not taken into account (Özdamar, 2003).

The Kaplan-Meier method calculates life and death functions without dividing the time interval of the data. The General K-M formula is;

$$\hat{S}(t_j) = \prod_{i=1}^{j} \hat{p}r(T > t_i \mid T \geq t_i) = \hat{S}(t_{j-1})\,\hat{p}r(T > t_i \mid T \geq t_i) \quad (1)$$

The Log-rank Test:

While the Kaplan-Meier method can comment on the difference in survival functions between two or more groups, it cannot comment on the significance of this difference. The log-rank test is commonly used test to test the significance of survival functions for different groups. The log-rank test is a nonparametric test (Şimşek, 2013).

The Long-rank test examines the difference between the observed and expected number of failed units of group i. The null hypothesis is set as follows and states that the survival probabilities of the two groups are not different.

$$H0: S1(t) = S2(t) \quad (2)$$

Its probability density function can be expressed as;

$$f(d_{1j}; d_j, n_j, n_{1j}) = \frac{\binom{d_j}{d_{1j}}\binom{n_j - d_j}{n_{1j} - d_{1j}}}{\binom{n_j}{n_{1j}}} \quad (3)$$

3.2.The Cox Regression Model

A Cox Regression model is a semi-parametric regression model developed by D.R. Cox in 1972. In parametric methods, the dependent variable of the model shows a certain probability distribution and at the same time the effects of independent variables on dependent variables can be expressed parametrically. However, these conditions cannot be met in nonparametric regression models. In semi-parametric models such as the Cox Regression model, the probability distribution of the explained variable does not follow a specific parametric distribution. However, here the effect of

explanatory variables on the explained variable can be expressed parametrically (Işık, 2007)

In the model, the dependent variable is time and independent variables are variables that are thought to affect the dependent variable (Kanık & Kum, 2003). Methods such as multiple regression analysis cannot be used in the Cox Regression model. The reason for this is that the dependent variable is not normally distributed and there is a correlation between the explanatory variables (Özdamar, 2003).

The variables used in linear regression analysis and logistic regression analysis are only explained and explanatory variables. However, this information is not sufficient for the Cox Regression model to be used. This is because the Cox Regression model estimation requires life spans and censoring information (Işık, 2007). In addition, more than one continuous and categorical variable can be used together in the Cox Regression model, and interactions can be included in the analysis in addition to main effects (Kanık & Kum, 2003).

The Cox Regression model, which can be called differently as Cox model or "Cox proportional hazards model", is a model that does not require distributional information.

The Cox Regression model can be represented as;

$$h\,(t;x)h_0(t)e^{\beta x} \tag{4}$$

where the β's are the coefficients of the regression, x is a vector of the explanatory variables and can be represented as $x = (x_1, x_2, \dots, x_p)$, and $h_0(t)$ is the hazard function and is defined for an individual with $x = 0$ (Karasoy et. al., 2015).

4.A Survival Analysis on the Duration of Unemployment in Adana Province in Turkey

This study aims to investigate the individual factors affecting unemployment duration. The data used for this purpose were

collected through a survey of 480 people in Adana in 2020. However, since some data were incomplete and incorrectly filled in, the model of the study was analyzed with the data obtained from 468 questionnaires. Individuals aged 18 and over were used as the main population in the study.

Individuals were asked about their gender, age, region of residence, educational status, whether they were actively working or not, duration of job search, vocational training, financial deprivation, social security institution registration status, number of ways they looked for a job, number of job offers received, and their primary obligation to provide for the family. In addition, the products that cause dependency in the individual were considered to have an impact on the duration of unemployment. Because, considering that the individual will constantly try to meet his/her need for the product he/she is addicted to and will prioritize these products, his/her tolerance for being unemployed and being deprived of income will decrease. For this reason, variables representing smoking and alcohol use were included in the survey.

Table 2 below summarizes the sample size of the dataset and the number of employed people. According to the table, out of 468 individuals in the Adana province in 2020, 276 individuals entered employment and 192 individuals were defined as stopped events. Stopped event refers to individuals who could not find a job.

Table 2. *General Situation*

Variable	Variable Level	n	Number of Job Entrants	Number of Stopped Events
Year	2020	468	276	192

The variables that are used and the levels at which they are used are shown in Table 3.

Table 3. *Variables used and their levels*

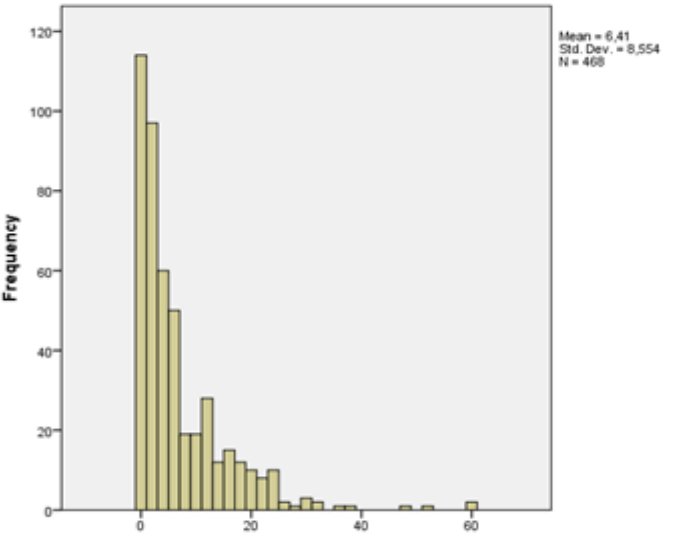
Variables	**Variable level**	**n**	**%**	**Number of Job Entrants**	**Number of Stopped Events**	**%**
Gender	0. Male	23	50.00	158	76	32.50
	1. Female	234	50.00 %	118	116	49.60 %
Marital Status	0. Single	24	51.20	109	131	54.60
	1. Married	228	48.80 %	167	61	26.80 %
Region	1. Provincial Center	304	65.00 %	191	113	37.20 %
	2. District Centers	128	27.30 %	72	56	43.80 %
	3. Villages	36	7.70%	13	23	63.90 %
Education	1. Secondary School or Below	93	20.00 %	38	55	59.10 %
	2. High school	164	35.00 %	86	78	47.60 %
	3. Bachelor's or Above	211	45.00 %	59	59	28.00 %
Active Work	0. No	19	41.10	-	-	-
	1. Yes	276	58.90 %	-	-	-
Vocational Training	0. No	20	44.00	77	131	63.00
	1. Yes	260	46.00 %	199	61	23.50 %
Financial Deprivation	0. Can't Buy New Clothes	153	32.60 %	43	110	71.90 %
	1. Can Buy New Clothes	315	67.40 %	233	82	26.00 %

SSI	0. Not Registered	152	32.50 %	19	133	87.50 %
	1. Registered	316	67.50 %	257	59	18.70 %
Cigarette	0. No	27	59.10	139	138	49.80
	1. Yes	191	40.90 %	137	54	28.30 %
Alcohol	0. No	36	78.40	214	153	41.70
	1. Yes	101	21.60 %	62	39	38.60 %
Family Livelihood	0. No	24	51.30	98	142	59.20
	1. Yes	228	48.70 %	178	50	21.90 %

According to Table 3, among the surveyed individuals, the gender distribution is equal. Furthermore, it shows that out of the male respondents, 158 are currently employed, while 118 female respondents are actively working. Approximately 51% of the individuals are single and 49% are married.

Most of the individuals in the study (65%) live in the provincial center, 27% in the district centers and the remaining 7% in the villages. In addition, 45% of the individuals are university graduates, 35% are high school graduates, while 20% have secondary school education or below. Approximately 58% of the individuals surveyed are currently actively working and 46% of the individuals have received vocational training. The financial deprivation status of the individuals was assessed based on their ability to purchase new clothes. While the majority of survey participants could afford new clothes, approximately 32% were unable to do so. The rate of individuals who were registered with the SSI in their last job is 67.5%. Approximately 41% of the individuals smoke and approximately 21% of the individuals drink alcohol. 48% of the surveyed individuals have the primary obligation to provide for their families.

Before starting the study, the histogram graph of the unemployment duration, which is the dependent variable, was drawn to determine whether the duration of unemployment is suitable for any known parametric distribution and is presented in Graph 1.



Graph 1. Histogram

When the histogram graph is examined, it is clearly seen that the series is not normally distributed and skewed to the right. Thus, it is seen that the duration variable is not suitable for a parametric distribution. Therefore, parametric regression models such as Exponential, Weibull, Gompertz, Log-logistic, Log-normal, Gamma were not applied to the variables. Instead, nonparametric Kaplan-Meier analysis and semi-parametric Cox Regression analysis were performed to the dataset.

4.1.Kaplan-Meier Analysis

In this part of the study, Kaplan-Meier analysis was first applied to the categorical variables that are thought to affect unemployment duration. The log-rank test, one of the nonparametric

tests, was used with Kaplan-Meier analysis. Table 4 shows the results of Kaplan-Meier analysis.

***Table 4**. Kaplan-Meier Results*

		Median			**Log Rank**
Variables	**Variable level**	**Unemp. (months)**	**Std. Err.**	**95% CI**	**P**
General		7	0.875	5.284-8.716	-
Gender	0. Male	5	0.635	3.755-6.242	0.171
	1. Female	10	1.582	6.900-13.100	
Marital Status	0. Single	5	0.59	3.844-6.156	0.021**
	1. Married	9	1.14	6.765-11.235	
Region	1. Provincial Center	6	0.574	4.874-7.126	0.000*
	2. District Centers	12	1.871	8.332-15.668	
	3. Villages	17.729	4.709	7.770-26.230	
Education	1. Secondary School or Below	13	3.833	5.487-20.513	0.000*
	2. High School	12	1.26	9.530-14.470	
	3. Bachelor's or Above	5	0.551	3.921-6.079	

Vocational Training	0. No	13	1.196	10.655-15.345	0.000*
	1. Yes	5	0.536	3.950-6.050	
Financial Deprivation	0. Can't Buy New Clothes	20	5.826	8.582-31.418	0.000*
	1. Can Buy New Clothes	5	0.451	4.116-5.884	
SSI	0. Not Registered	-	-	-	0.000*
	1. Registered	6	0.533	4.954-7.046	
Cigarette	0. No	8	1.209	5.471-10.529	0.443
	1. Yes	6	1.076	3.891-8.109	
Alcohol	0. No	7	1.171	4.704-9.296	0.972
	1. Yes	7	1.085	4.873-9.127	
Family Livelihood	0. No	7	1.675	3.717-10.283	0.082***
	1. Yes	7	0.918	5.200-8.800	

Note: *, **, & * represent 99%, 95%, & 90% confidence levels, respectively.**

According to the Kaplan-Meier results, there are significant differences with 95% confidence between the levels of marital status, region, education, vocational training, financial deprivation, and SSI registration categorical variables in the dataset in terms of duration of unemployment, while there are significant differences with 90% confidence between the levels of the categorical variable of providing for the family in terms of duration of unemployment.

If we interpret the table in more detail, there are significant differences in terms of unemployment duration according to whether

individuals are married or single, and the duration of unemployment of single individuals is shorter than that of married individuals.

When the duration of unemployment is analyzed according to the regions where individuals live, individuals living in the provincial center are the ones who find a job in the shortest time. When the duration of unemployment is analyzed according to the last completed school level, it is seen that the group with secondary school and below education level constitutes the group that has been unemployed the longest. The group that finds a job in the shortest time is individuals with university and higher education. After individuals with secondary school education or below, high school graduates are the ones who remain unemployed for the longest time. In addition, as expected, individuals with vocational training have shorter periods of finding a job than individuals without vocational training. Similarly, there are significant differences between the variables of financial deprivation and being registered to a Social Security Institution (SSI). Those who can afford to buy new clothes have shorter employment durations than those who cannot and those who are registered to SSI have shorter employment durations than those who are not.

4.1.1.The Kaplan-Meier Survival Estimates

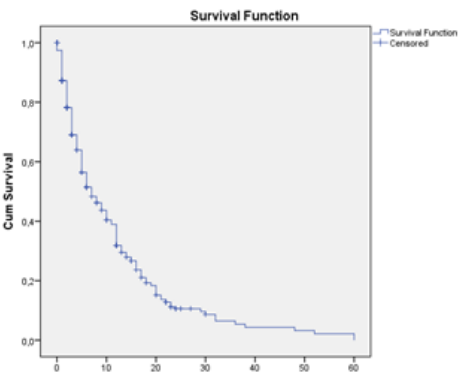


Figure 1. The Overall Kaplan-Meier Survival Estimation

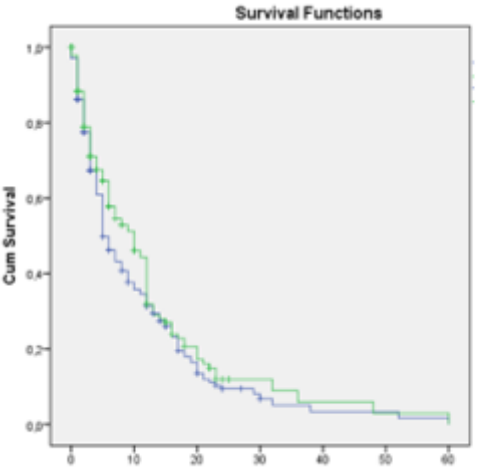


Figure 2. *The Kaplan-Meier Survival Estimation for the Gender Variable*

Figure 2 shows that there is no significant difference between men and women in terms of gender.

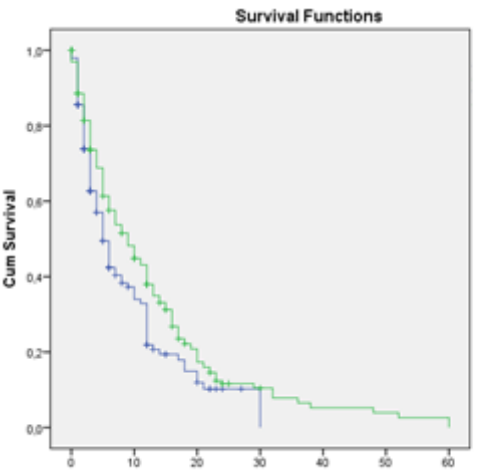


Figure 3. *The Kaplan-Meier Survival Estimation for the Marital Status Variable*

Figure 3 shows that, in terms of marital status, unemployment duration of single individuals is shorter than that of married individuals.

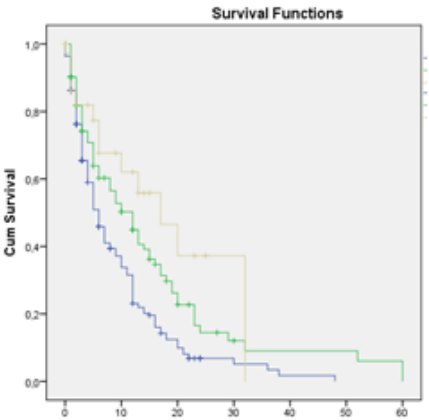


Figure 4. The Kaplan-Meier Survival Estimation for the Region Variable

Figure 4 shows that individuals living in the provincial center have the shortest duration of unemployment, while individuals living in the villages have the longest duration of unemployment.

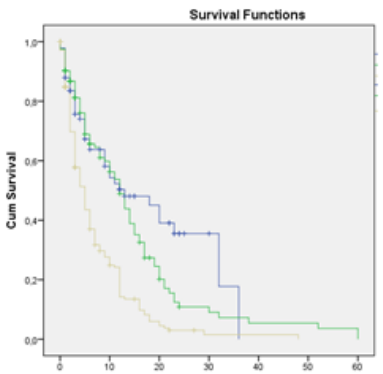


Figure 5. The Kaplan-Meier Survival Estimation for the Education Variable

Figure 5 shows that the duration of finding a job is shorter for university graduates or above compared to other education levels.

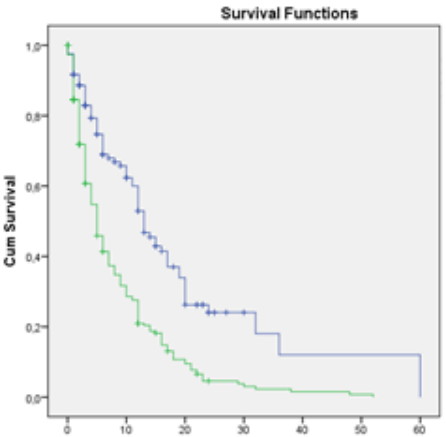


Figure 6. *The Kaplan-Meier Survival Estimation for the Vocational Training Variable*

Figure 6 shows that individuals who receive vocational training have jobs in a shorter period of time than individuals who do not receive vocational training.

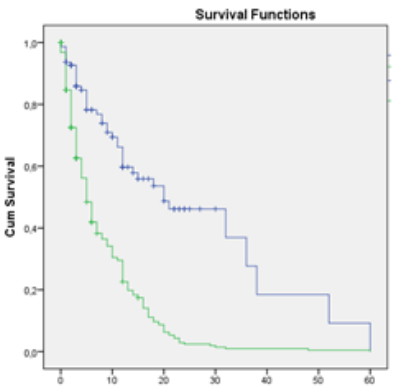


Figure 7*. The Kaplan-Meier Survival Estimation for the Financial Deprivation Variable*

Figure 7 shows that individuals who can afford new clothes have shorter duration of unemployment in each period than individuals who cannot afford new clothes.

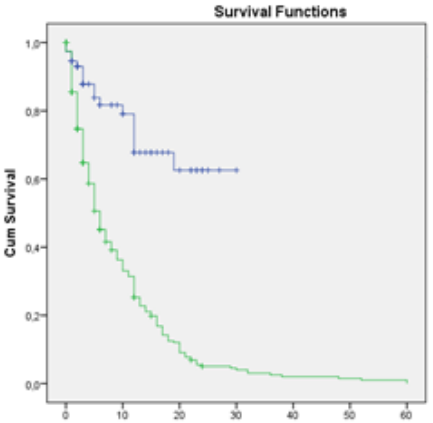


Figure 8. *The Kaplan-Meier Survival Estimation for the SSI Registration Status Variable*

Figure 8 shows that those who are registered with the SSI have a shorter time to find a job than those who are not registered with the SSI.

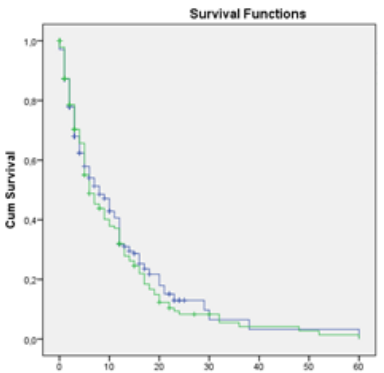


Figure 9. *The Kaplan-Meier Survival Estimation for the Smoking Status Variable*

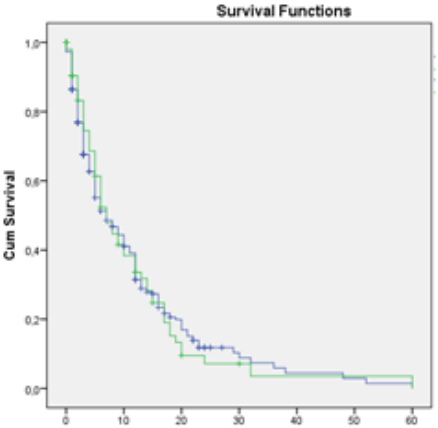


Figure 10. *The Kaplan-Meier Survival Estimation for the Alcohol Status Variable*

When the graphs created for smoking and alcohol variables are analyzed, it is seen that there is no significant difference between individuals' dependence on these substances and the duration of their employment.

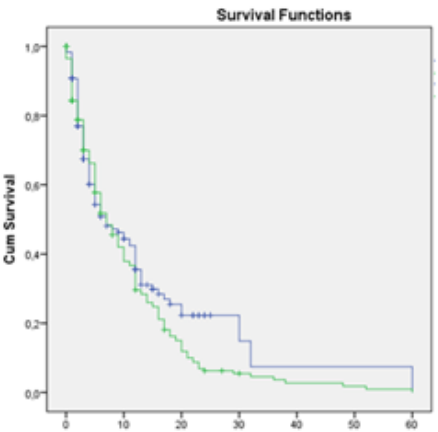


Figure 11. *The Kaplan-Meier Survival Estimation for the Family Livelihood Variable*

Figure 11 shows that individuals with the primary obligation to provide for the family have a lower survival rate in any given period. In other words, it is observed that the duration of finding a job is shorter than individuals who are not primarily responsible for providing for the family. The reason for this is the family responsibility assumed by individuals; they do not want to victimize their dependents for a long time

4.2.The Cox Regression Model Results

In order to determine the factors affecting unemployment duration, Cox Regression analysis including all variables was performed first. Then, the forward stepwise selection method is applied to identify the explanatory variables whose effects on the duration of unemployment are significant. In each step of the analysis, -2 Log-Likelihood values, which express significance compared to the previous step, are calculated. If the p value of the model formed with the added variable is less than 0.05, it can be said that the variable added to the model in that step is significant. As a result of the analysis, positive β parameter estimates indicate that the level is riskier than the reference level, while negative β parameter estimates indicate that the level is less risky than the reference level. The expβ value, which expresses the hazard ratio, indicates the number of times more or less risky than the reference level. The results obtained from the Cox Regression analysis are given in Table 5 and Table 6.

Table 5. *The Omnibus Test of Model Coefficients*

-2 Log Likelihood	χ^2	**p**
2603.852	141.670	0.000*

Note: *, **, & * represent 99%, 95%, & 90% confidence levels, respectively.**

The validity of the model is analyzed by the -2 Log Likelihood value. We can say that the model is significant since the p-value is 0.000.

Table 6. *The Cox Regression Analysis Results*

Variables	**Variable Level**	**β**	**Std. Err.**	**p**	**expβ**	**CI for**
Gender	Female	-0.25	0.139	0.077***	0.78	0.595-
Age	Year	-0.03	0.014	0.061***	0.97	0.946-
Marital Status	Married	-0.13	0.168	0.428	0.88	0.630-
Region	District	-0.34	0.153	0.028**	0.71	0.529-
	Villages	-0.19	0.333	0.573	0.83	0.432-1.591
Active Work	Month	-0	0.002	0.073***	0.99	0.994-
Vocational	Yes	0.155	0.168	0.358	1.17	0.840-
Financial	Can Buy	0.666	0.237	0.005*	1.95	1.223-
SSI	Registered	0.891	0.28	0.001*	2.44	1.408-
SSI Duration	Month	0.001	0.001	0.225	1	0.999-
Cigarette	Yes	0.05	0.127	0.692	1.05	0.820-
Alcohol	Yes	-0.15	0.158	0.332	0.86	0.630-
Job Search Ways	Number	-0.13	0.032	0.000*	0.88	0.824-
Job Offers	Number	0.105	0.038	0.006*	1.11	1.031-
Provision of	Yes	0.234	0.159	0.14	1.26	0.926-
Education	High School	-0.37	0.241	0.128	0.69	0.433-
	Bachelor's or Above	0.005	0.243	0.983	1.01	0.625-1.617

Note: *, **, & * represent 99%, 95%, & 90% confidence levels, respectively.**

When Table 6 is analyzed; we can say that financial deprivation, SSI, number of job search paths, number of job offers received and region (district centers) variables are important factors affecting unemployment duration. Gender, age and duration of active employment have an effect on the duration of unemployment only at the 90% confidence interval. However, marital status, region (villages), vocational training, duration of SSI registration, smoking, alcohol, family breadwinner and education variables do not affect the duration of unemployment. Since most of the variables in the model are found to be insignificant, that is, they do not affect the

duration of unemployment, which is the dependent variable, the forward stepwise selection method was applied to establish the correct model. The Omnibus test results, which test the significance of the parameters in the models obtained at each step, are as shown in Table 7.

Table 7. *The Omnibus Test for the Forward Stepwise Selection Method*

Step	-2 Log Likelihood	Overall (score)		Change From Previous Step	
		χ^2	p	χ^2	p
1[a]	2698.631	55.135	0.000*	62.837	0.000*
2[b]	2683.3	74.081	0.000*	15.331	0.000*
3[c]	2657.662	86.783	0.000*	25.683	0.000*
4[d]	2646.061	93.665	0.000*	11.601	0.001*
5[e]	2632.961	110.551	0.000*	13.1	0.000*
6[f]	2621.369	120.404	0.000*	11.592	0.003*
7[g]	2615.477	129.037	0.000*	5.892	0.015**

Note: *, **, & * represent 99%, 95%, & 90% confidence levels, respectively.**

As seen in Table 7, the analysis was completed in 7 steps. When the overall results are examined, it can be said that at least one variable in the model is significant since the p-values are less than 0.05 and also according to the results of change from the previous step, the final version of the model is generally significant since the p-value is less than 0.05 in the last step. The results of the cox regression analysis established with the forward stepwise selection method are presented in Table 8.

Table 8. *The Cox Regression (Forward Stepwise Likelihood Ratio) Analysis Results (Step 7)*

Variables	**Variable Level**	**β**	**Std. Err.**	**p**	**expβ**	**CI for Expβ**
Gender	Female	-0.31	0.127	0.016**	0.74	0.573-0.944
Age	Year	-0.04	0.009	0.000*	0.96	0.945-0.980
Financial deprivation	Can Buy New Clothes	0.518	0.218	0.017**	1.68	1.095-2.573
SSI	Registered	1.05	0.275	0.000*	2.86	1.668-4.898
Job Search Ways	Number	-0.13	0.032	0.000*	0.88	0.826-0.937
Job Offers	Number	0.105	0.036	0.004*	1.11	1.034-1.192
Education	High School	-0.42	0.225	0.064***	0.66	0.424-1.025
	Bachelor's or Above	0.109	0.218	0.618	1.12	0.727-1.711

Note: *, **, & * represent 99%, 95%, & 90% confidence levels, respectively.**

According to Table 8, it can be said that all variables except education (university or above) are factors affecting the duration of unemployment at the 95% confidence level in the model established with the forward stepwise selection method. In case where $exp\beta < 1$, according to the reference levels, the reference level is interpreted in reverse by calculating $\frac{1}{exp\beta}$ for easier interpretation.

- Based on the Cox Regression analysis results, the following inferences can be established:

- Being a woman has a significant effect on the duration of finding a job, and the duration of finding a job is 1.35 times shorter for men than women. This result is due to the fact that the number of sectors and professions where women can find a job is low in terms of job opportunities in Turkey.
- As the age of the individual increases, the risk of finding a job also increases. This result stems from the fact that employers think that younger individuals are more active, more productive and can keep up with technology faster.
- The financial deprivation variable has a significant effect on the duration of finding a job, and the duration of finding a job is 1.67 times longer for individuals who can afford new clothes than for individuals who cannot. Since these individuals have a good financial situation, they are more flexible in finding a job relative to individuals who are less well-off.
- Individuals who are registered with the social security institution in their last job take approximately 2.85 times longer to find a job than individuals who are not registered. This result stems from the fact that individuals with SSI registration in their last job want to work under better conditions during their job search.
- An increase in the number of job search paths extends the duration of job search by about 1.13 times and an increase in the number of job offers received by the individual extends the duration of finding a job by about 1.11 times. According to these results, the increase in the number of job search opportunities and the increase in the number of job offers received

by the individual cause the individual to remain indecisive and prolong the time to find a job.

According to Table 8, while the variable that refers to high school graduates has a significant effect on the duration of finding a job, the variable that refers to university graduates or above does not have a significant effect on the duration of finding a job. If we interpret the education variable in general, the increase in the education level of the individual increases the duration of job search. This is due to the fact that individuals with higher education level, i.e. those with higher qualifications, act more selectively when looking for a job.

Conclusion

In the first part of this study, explanations about unemployment are made and then the details of survival analysis are given and parametric and nonparametric methods are mentioned.

In the application section, the dataset collected through a survey applied throughout Adana was used. 468 individuals were included in this dataset conducted in 2020. Individuals who could not find a job after looking for a job are defined as stopped data. It was observed that the dependent variable whose histogram graph was drawn did not fit the normal distribution. Therefore, parametric analysis methods were not applied to the dataset. The Kaplan-Meier analyses were first performed for the dataset. Related tables and graphs are included in the analysis section. As a result of the Kaplan-Meier analysis, the log-rank test was performed to test whether there was a significant difference between the levels of the variables included in the analysis. According to the findings obtained from the Kaplan-Meier results, it was concluded that there were significant differences between the levels of marital status, region, education, vocational training, financial deprivation status, and Social Security Institution (SSI) Registration status. The Cox Regression analysis was then conducted and the forward stepwise selection method was used to construct the appropriate model and the model was

completed in step 7. According to the results of the model, since Turkey has a patriarchal society structure, men are less selective than women in order to avoid unemployment and it can be accepted that the duration of unemployment of men is shorter than women when it is considered that they get the job they find. Increasing age is found to be a factor that prolongs the duration of finding a job. This result is acceptable considering that employers want to work with younger, more dynamic and technologically advanced employees. This result supports the studies of Danacica et.al. (2006). Similarly, the increase in the number of job search paths and the increase in the number of job offers were found to be factors that prolong the time to find a job for individuals who can buy new clothes, individuals with SSI records in their previous job.

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BÖLÜM VIII

Working Life and Career: An Evaluation on Tourism Sector

Özgür GÜLDÜ[1]

Introduction

The increase in the budget allocated to travel, with rising welfare levels and the development of transportation technologies, has made tourism one of the fastest-growing sectors in the world. Owing to its positive effects on economic growth and development, this sector is considered one of the important social and economic phenomena of the 21st century for both developed and developing countries (Istanbul Development Agency, 2012; Republic of Türkiye Ministry of Development, 2014).

Employees are the most important component of tourism due to its labor-intensive nature. The success of the business and its image in the eyes of consumers are largely shaped by employees' personality traits, talents, skills, attitudes, and behaviors. In other

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words, employees' characteristics affect tourism enterprises' service quality and customer satisfaction. Qualified employees who are courteous, harmonious, and helpful when dealing with customers, who are inclined to provide service, who learn quickly, and who can make and implement decisions when necessary make a great contribution to the performance of the business and the quality and continuity of the service (Güldü, 2019). However, because of significant increases in demand for tourism at certain times of the year, a significant number of employees are employed seasonally. This leads to the elimination of job security, employment of unskilled workers, and relatively low wages. Therefore, as in many other sectors, employees in the tourism sector cannot meet their career expectations, and as a result, they face many career problems that cause them to feel frustrated (Buyruk, 2014). Career-related problems also lead to high staff turnover. Most students and graduates in the field of tourism in Turkey state that they are thinking about or working in sectors other than the tourism sector. The reasons for their negative attitudes towards the tourism sector and the reasons why they do not prefer to work in the sector are that the tourism sector does not meet their expectations, the insufficiency of career opportunities in the sector, and the low status of job positions in the sector (Olcay & Düzgün, 2015).

Despite all the negativities mentioned above, the need for employees who have been educated in this field, have professional experience, and plan to realize their career in tourism is increasing daily to develop and ensure the continuity of the tourism sector. As a result, career and career planning issues in tourism have gained importance. It is of great importance for people to act within the framework of a specific career plan from the first day of their education in the field of tourism, to determine their deficiencies, and to try to overcome them to form the qualified manpower needed by the sector (Çatır & Karaçor, 2016).

In the following section, the career, career development, and career planning processes will be addressed, and the career planning

process in tourism will be discussed within the framework of the existing literature.

Basic Concepts

Career

The origin of career is based on the Latin words "carrus" (chariot) and "carrera" (road), French "carrierre" (race track) and English "career" (profession). This concept, which was used in the past centuries to mean the road left behind by a horse-drawn carriage, today means "the continuous progress of a person in any job" (Aytaç, 2005).

Career, a concept frequently used in working life, has many definitions, including different aspects. In general terms, a career is the process of an individual's advancement, gaining experience and skills in any field of work throughout his life (Erdoğmuş, 2003). Aytaç and Keser (2017) stated that career has a meaning beyond this definition. According to them, a career does not only mean having a job and progressing upward. In contrast, it includes the training process for realizing expectations, goals, feelings, and desires related to the job and the ability to progress in the workplace with the knowledge, skills, abilities, and desire to work. From the same perspective, Bayraktaroğlu (2008) defines a career as a lifelong process equipped with human behavior motives. According to him, a career is the process of advancing in a chosen field of work and, as a result, earning more money, assuming responsibility, status, power, and prestige.

In 1937, American sociologist Hughes first defined the concept of career in the literature, which entered the working life in the USA in the early 1900s with Frank Parsons' efforts to help young people settle into appropriate jobs by providing vocational training and guidance services. In the following years, especially after World War II, a qualified labor force gained great importance in trying to rebuild the economic structure, especially in the countries that participated in the war. This increased interest in the concept of

career (Erdoğmuş, 2001; Yeşilyaprak, 2011). Many studies have been conducted on career choice (e.g., Ginzberg et al., 1951; Super, 1957), individual career development (e.g., Roa, 1956; Gysberg, Hepner, & Johnston, 1998; McDaniels & Gysbers, 1992), and career counseling (e.g., Holland, 1966) (cited in Yeşilyaprak, 2011).

Since the second half of the 1990s, the number of multinational/global companies has increased because of rapid changes in the global economy. At the same time, technology has begun to develop at a dizzying pace. This has brought competition to the forefront in working life, thus making it important to produce qualified services. In addition, applying scientific knowledge to daily life and the strategic importance of having this knowledge have caused multifaceted socio-economic changes in business life, especially among employees. These changes have brought about the discussion of new paradigms that go beyond the traditional patterns in career literature (Seymen, 2004; Yeşilyaprak, 2011). The need for lifelong learning, continuous self-improvement, and the need to remain employable have replaced lifelong job security and continuous advancement in income. In other words, the importance of the workforce's quality differentiates individuals' career expectations. Career management and development responsibility has been accepted as a dynamic process at the employee's initiative and continues throughout life. In addition to receiving a good education, both private and public institutions and organizations expect their employees to have the knowledge, skills, character, attitudes, and behaviors that can transform their competence into productivity in the best way, develop themselves in a versatile way, represent their institution in the best way, be sensitive to social problems and events, and make a difference in private and business life. Therefore, employees should be better equipped to move up the organizational ladder (Anafarta, 2001; Şenel, 2010; Dikili, 2012).

Erdoğmuş (2003) also states that the meaning of the concept of career has changed due to the social and economic changes caused by globalization, changing the expectations of individuals regarding education and the future. Career, which was used in the sense of

progression until recently, defines a process in which an individual gains knowledge and develops himself under today's conditions. According to Şenel (2010), this process brings a self-centered career to the forefront today. This concept means that individuals manage and plan their careers for their well-being and development. Nowadays, a career is largely shaped by an individual's responsibility, and the organization supports the individual to gain more skills and knowledge.

Career Development

Career development refers to an individual's development in making a career plan, implementing it, and achieving success. It has been argued that combining many concepts, such as tasks at work, life roles, leisure time activities, self-evaluation, and decision-making styles, will indicate career development (Eryılmaz & Mutlu, 2017). According to Herr, Cramer, and Niles (2004), career development refers to contextual factors and psychological and behavioral processes that shape an individual's career. In this sense, career development includes the individual's career patterning, decision-making style, integration with career-related life roles, expressing this to others, and self-evaluation of one's role in life. Therefore, career development is a lifelong dynamic structure that changes from time to time (as cited in Owen, 2013).

According to Super (1957), who conducted research on career development, career development is a process that is influenced by the individual's experiences from work and private life. According to him, the career development of each individual has different elements. Social, economic, and environmental factors affect people's lives, and individual characteristics such as age, gender, education, socio-economic status, interests, skills, and abilities affect career development and career choices. In the career process, which develops from childhood, different qualities are acquired as age progresses. In this process, the individual gradually matures to make career-related choices, adapt to current conditions, and cope with changing work and life conditions when necessary.

First, they will fulfill the tasks of planning their future career, determining their professional preferences, and putting them into practice. Then, they evaluate whether their career decision and occupational choice is a good choice or not. In particular, in this evaluation, he will decide whether his choice is sufficient to express his self-concept. In other words, he will determine its suitability to his skills, abilities, interests, and expectations. If he decides it is appropriate, he will focus on being a reliable employee, taking on more responsibility, and progressing. However, suppose he assesses that his career and occupational choice are unsuitable. In that case, he will restart the discovery cycle in which he will make and implement a career choice that he will express himself (Siyes, 2013).

Career Planning

Today, to be successful in working life, a person needs to know himself, be aware of his talents and skills, and see and evaluate the opportunities around him. As can be seen, the responsibility in this process lies with the individual himself. A person who is aware of this will create a career plan appropriate to his ability and knowledge to achieve his goals and will be motivated to search for opportunities to realize them (Adekola, 2011; Tanoli, 2016). Career planning is an important process for individuals to continue their working lives and be successful. Generally, it is a road map expressing the individual's career development. It includes discoveries and plans about who they are, what they want to be, and where they want to be in the future (Güldü & Kart, 2017).

Antoniu (2010) defined career planning as the professional development process resulting from the individual's realization of skills, abilities, needs, motives, and expectations. According to Anafarta (2001), career planning is an individual's awareness of opportunities, options, and their consequences in working life, determining career goals and programming work, education, and other developmental activities that will enable him to reach them.

In today's conditions, the career journey that starts at a very early age is a long-term path shaped according to the individual's

abilities, skills, and interests, progresses based on education and training, and reaches a certain maturity with entry into the labor market. From an early age, individuals begin to dream about the future and set their career goals, first under the influence of their families and then under the influence of social, cultural, and economic conditions. From their first school years, they intensely try to maximize their abilities by receiving the necessary training (Litoiu, 2009; Adıgüzel, 2009; Tunçer, 2012). High school and especially university years are the most intense periods when career options are evaluated. Supporting and guiding students to make the right choice for themselves during this period is of great importance for both their private and professional lives in the future. Because a conscious and planned career choice will enable them to be more efficient and effective by achieving a balance in their professional and private lives, at this stage, determining the needs and expectations of students and the areas and subjects in which they need support is crucial for them to get successful results from their career plans. Suppose this process is not given the importance it deserves. In that case, if a person makes an unplanned transition to business life and cannot settle in a job that suits his knowledge, skills, interests, and values, it will be inevitable to waste time and resources (Akoğlan Kozak & Dalkıranoğlu, 2013).

Mayrhofer et al. (2005) state that due to the dynamic structure of global markets and the fact that long-term job and employment guarantees are not as common as they used to be, the concepts of lifelong work within an organization and commitment to the company have lost their importance, and it has become increasingly difficult for individuals to limit their careers to a certain organization. According to them, rapid change and transformation in the business world have resulted in the restructuring of organizations. As a result, it has become more important for managers to retain more qualified employees and ensure their professional development. Consequently, employees take their jobs more seriously and focus on developing their skills and advancing

within the organization. In other words, they perform an effective career planning process.

As can be seen, career planning is a crucial process for both the employee and the organization. Although it is generally considered as a structure that is formed and developed under the responsibility of the employee, many organizations help their employees in their careers by taking measures to keep them away from problems such as stress, tension, disappointments, and mid-life crises, and thus try to improve the quality of their work life (Aytaç & Keser, 2017). Tüz (2003) evaluated career planning as a two-dimensional structure. The first dimension is the individual career planning process. In this process, the individual focuses on understanding and determining his/her place in business life and deciding where and how he/she wants to be. The second dimension is examining and directing career in the organization. In this dimension, the organization tries to adapt employees' individual career goals and plans to their own goals. In other words, there is a process involving the integration of organizational and employee goals.

According to Jaffe and Scott (1991), in the individual career planning process, the individual first discovers his abilities, skills, interests, goals, strengths, and weaknesses (self-assessment) to determine his place in working life. In the next stage, he will examine the career opportunities around him in accordance with his interests and goals (recognizing opportunities). This stage is followed by the process in which the individual creates career goals according to the identified opportunities (goal setting). The individual who sets his goals will prepare and implement his career plan (plan preparation-activation). In the last stage, the individual will review the entire process and evaluate to what extent he has achieved his career goals (as cited in Tarigan & Wimbarti, 2011).

Organizational career planning is the process of harmonizing an individual's career plans and goals with the organization's goals, determining the number of employees the organization will need in

the future, and creating the career opportunities that employees need to rise within the organization. For this purpose, businesses establish systems and programs to help employees realize their career plans. Thus, an organization that implements career planning practices according to the needs of current and potential future employees becomes more advantageous than other institutions. Employees' job satisfaction, loyalty to the organization, and productivity increase, and at the same time, it becomes possible for organizations to sustain their existence in today's intense competitive environment. In addition, employing qualified personnel and meeting their costs to the organization is realized through career planning activities. A business that wants to place organizational career planning within the organization should first get to know its employees better, determine their needs and desires, and evaluate their qualifications and performances. Then, they should define the available job positions in the organization, identify the employees who can successfully fulfill the requirements of these positions, and match the employee with the position. During this process, training and career counseling services should be provided to help them improve their skills and abilities. In addition, strategies for career planning and development should be developed at the organizational level (Kılıç & Öztürk, 2009; Sevinç & Sabuncu, 2018).

Career Planning in the Tourism Sector

Career planning in the tourism sector is highly important because it increases the quality of services provided, workforce productivity, and customer satisfaction and reduces workforce planning and staff turnover. In addition, individual reasons such as taking care of employees' problems, making them feel important, and ensuring that they are motivated and satisfied in their jobs also make career planning important. As mentioned before, in the tourism sector, where intense competition is experienced, businesses must employ qualified, highly motivated, and loyal employees to survive. To address these issues, businesses should offer career management practices to their employees (Çavuş & Kaya, 2015; Akoğlan Kozak, 2001; Kılıç & Öztürk, 2009).

Career management, accepted as a contemporary management technique for ensuring that the business and employees act together within a common goal, increases their commitment to the organization and makes them productive by supporting employees' career plans. At the same time, various practices related to career management cause employees to approach their future careers more consciously, to believe that the organization will support them in achieving their goals, and therefore to increase their trust in their organizations, to be motivated toward their work, to integrate with their organizations, and to cooperate with them. In this regard, businesses develop various strategies to retain qualified employees within the organization and make arrangements to improve their working environment and meet their demands. Thus, they can meet the demands of their customers who expect quality service (Kılıç & Öztürk, 2009).

Many studies have been conducted on career, career management, and career planning in the tourism sector (e.g., Airey and Frontistis 1997; Ladkin and Juwaheer 2000; Ladkin and Riley 1996; McCabe 2008; Ng and Pine 2003). These studies evaluated employees' views on career management and career planning in tourism enterprises in different countries and individual and organizational practices.

In the Turkish literature, many studies on career and career management have been conducted on both students studying tourism at the university level and employees working in the tourism sector. The first studies conducted with associate and undergraduate tourism students determined that students were not very interested in pursuing a career in the tourism sector and thought of planning and continuing their careers in other sectors after graduation. As reasons for this negative perception, students cited the prevalence of seasonal employment in the sector, inadequate wages and working conditions, long working hours, high workload and stressful working environment, heavy working conditions, lack of an equitable promotion system, lack of protection of employees in the sector by any legal regulations, low professional prestige, and not willingly

preferring the field of tourism willingly (Akoğlan Kozak & Kızılırmak, 2001; Aksu & Köksal, 2005; Baltacı, Üngüren, Avsallı, & Demirel, 2012; Kuşluvan & Kuşluvan, 2000; Pehlivan, 2008; Türker, Uçar, & Ateş, 2016; Üngüren & Ehtiyar, 2008; Üzümcü, Alyakut, & Günsel, 2015).

Although some of these negative conditions persist, recent studies show that there has been a change in students' perspectives and career plans toward the sector. The majority of students studying tourism at universities have stated that they consciously prefer tourism education and plan their long-term careers in the tourism sector after graduation for reasons such as the continuous development of the tourism sector, easier job finding as a result of the increase in the employment area, improvement of social rights of employees, higher wages compared to other sectors, institutionalization of enterprises, the opportunity to meet people from different nations, and the opportunity to go abroad (Dinçer, Akova, & Kaya, 2013; Çatır & Karaçor, 2016; Çavuş & Kaya, 2015; Çuhadar, & Çetintürk, 2016; Günay, Akıncı, 2017; Olcay & Düzgün, 2015; Özdemir & Önçel, 2019; Ulama, Batman, & Ulama, 2015; Yetgin, Yılmaz, & Çiftci, 2018).

Career management and planning practices carried out in businesses operating in the tourism sector also significantly impact employees and businesses, i.e., at individual and organizational levels. Uzdil Cerit (2007) argues that employees in tourism enterprises should be provided with a working environment where they can use their talents and creativity, an organizational performance evaluation system should be developed, employees should be given authority and responsibility within the framework of their job descriptions, professional and personal training should be organized, and orientation training should be given to recruits to get to know the job, work environment, and other employees. The Committee stated that it is important to provide career options for women employees to balance work and private life, to implement a fair promotion system, to continuously inform employees about their career paths and chances for advancement, and to provide career

counseling services to all employees, especially new hires and those nearing retirement, to ensure an ongoing productive work environment.

Akoğlan Kozak (1999) examined career development and planning practices in hospitality organizations and found that employees were highly aware of career planning practices. The employees in the enterprises in the study stated that career development and planning practices, including on-the-job and off-the-job training, seminars and conferences, rotation, delegation of authority, group work, performance appraisal, and career counseling services, are carried out to increase staff productivity and motivation, staff development, and service quality. However, Giritlioğlu (2010), in a study conducted on the personnel working in the kitchens of accommodation establishments, stated that organizational career planning practices are not carried out in their establishments and that the fact that they do not receive enough support in their career planning processes is a factor that prevents them from making a career. For this reason, employees think that they must continuously improve themselves to make a career.

Kılıç and Öztürk (2009) also attempted to determine the perception levels of employees in accommodation enterprises regarding career planning practices at the organizational level. In the study, it was determined that employees support the practice of personnel selection according to the nature of the job in recruitment processes in their organizations and the determination of dismissal processes according to the success and productivity levels of employees. Positive opinions were expressed about the assignment of employees in accordance with their skills and education, giving authority and responsibility for their duties, and evaluating their success. In addition, career development practices for providing information and training to recruits were also evaluated positively. However, it was observed that the level of perception of the practices for organizing training programs, conferences, and seminars that will contribute to the professional development of the employees and providing consultancy regarding the jobs they can work in the future

and the requirements of these jobs is at a low level. The researchers interpreted this situation because practices related to organizational career planning are not carried out adequately in these enterprises.

Aydın (2010) conducted a study to determine career management practices in accommodation enterprises and employees' perspectives on career planning and found that career management policies in enterprises start during the recruitment process, training is provided to increase the motivation of employees, separate training programs are implemented for middle and senior managers, priority is given to existing personnel to fill vacant positions in the enterprise, and career development activities are carried out by giving feedback to employees about their performance. Employees stated that giving feedback to them about the aspects they need to improve and providing training to compensate for their deficiencies when necessary increased their motivation and trust in the organization. Employees stated that although these practices are carried out throughout the organization, the human resources unit does not provide each employee with one-to-one career planning and development support. They receive support from unit managers , which positively affects their career guidance.

Conclusion

Career is a concept that indicates the place of an individual in the organization where works and, at the same time, describes development and rising success within the profession or organization. Career planning determines the professions, workplaces, and paths in which an individual will continue his career. In other words, career planning is the planning of the job-related tasks and positions, goals, and future of the individual throughout his life (Aytaç & Keser, 2017). Today, it is stated that career planning should be carried out at individual and organizational levels. In the individual career planning process, the individual will evaluate his personality traits, abilities, skills, and interests, determine the most suitable career options for himself,

examine opportunities, create career plans to achieve goals, and make the necessary efforts to realize them. Organizational career planning aligns individual career goals and plans with organizational goals. Organizational career planning is accepted as one of the important career practices that businesses should implement to have qualified employees and sustain their existence. A business that realizes practices that support the careers of its employees will increase their motivation, commitment to the business, productivity, and job satisfaction.

When the current tourism literature is examined, it is seen that many studies have been conducted on career planning both in the education period and in working life. Although there are differences in research results, research results generally show that awareness of career, career management, and career planning is high at both individual and organizational levels. The results of the first studies conducted to determine the opinions and evaluations of associate and undergraduate students on career management and career planning indicate that they do not want to pursue a career in the tourism sector after graduation due to reasons such as the prevalence of seasonal employment, insufficient wages and working conditions, long working hours, high workload and stressful working environment, heavy working conditions, lack of an equitable promotion system, and low professional prestige. However, recent studies have shown that students' views have changed due to improvements in many sectoral conditions (wages, social rights, institutionalization, meeting foreigners, the opportunity to go abroad, etc.). Students stated that they consciously chose tourism education and planned their long-term career plans in the tourism sector. It has been determined that most enterprises operating in the sector conduct studies to support their employees in planning and managing their careers. Businesses perform many practices, including on-the-job and off-the-job training, organizing seminars and conferences, rotation, delegation of authority, performance appraisal, creating a fair promotion system, and providing career counseling services. Thus, businesses ensure that their employees

approach their future careers more consciously and believe that the organization will support them in achieving their goals. Therefore, it increases their trust in the organization and facilitates integration and cooperation. Career planning activities at the organizational level also have many benefits for businesses. Employees with high motivation and productivity created by the support given to their career development increase the quality of service and customer satisfaction. Career planning practices at the organizational level have many positive effects on employees and businesses.

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BÖLÜM IX

Contemporary Strategic Cost Management Revisited: Are they still Contemporary in the Digital Era?

Ipek TÜRKER[1]

Introduction

Prior to the COVID-19 pandemic taking over the world in every sense, the academia was already diligently working on theorizing, measuring, and analyzing the effects of "digitalization"; especially within the accounting field. And after the pandemic began one of the major effects of it turned out the be the lack of economical activities. Curfews and social isolation caused implementation of different work models. One of the consequences of the situation was working from home, and another consequence was the prices of the

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direct materials increasing due to the fact that the pandemic had started in China, and majority of the direct materials come from China. Not to mention the fact that the backbone of technological products' direct and raw materials came from China. A very solid example would be either trying to upgrade your computer/laptop or buying a brand new one, the prices on the main hardware hiked up significantly, a detailed information can be found from various sources (Martindale, 2020). The pandemic also brought the backlash of the increase in the number of online shoppers, at the early days of the pandemic a lot of the logistical companies got effected alongside with the production line as stated above. Below is the chart from Statista's estimates of the expected increase in the e-commerce (KPMG, 2020).

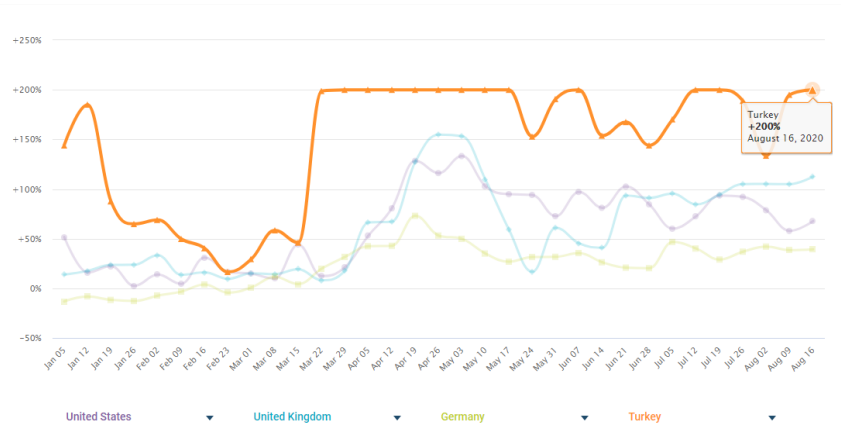

Exhibit 1: The expected change in the e-commerce estimates, charts published on KPMG's website.

Manage the Cost, The Theories

As a subbranch of accounting, managerial accounting is one of the fundamental foundations of the business decision making process. When we look at the managerial activities step by step, it begins with planning for both short term and long-term goals and how to achieve these goals. The decision-making process begins

with identifying these goals and the categorizing the planning into either strategical planning which involves development of a long-term goal and how to achieve these goals, or operational planning which involves the short-term, immediate decisions that needs to be made usually within the day-to-day operational activities. Then we have directing and controlling as steps of business management (Miller-Nobles & Mattison, 2017).

Historically, the need for cost information has evolved, as well as the methods to acquire this information. When it is reviewed these four phases can be determined based on the use of cost information (Orhon Basık, 2012) (Barfield, Raiborn, & Kinney, 1998) :

- First Phase; the years between 1900-1920: Cost information was ignored; production cost wasn't calculated, and the only formal control was through physical inventory count.
- Second Phase; the years between 1920-1960: This era contains two major economical and social events, the stock exchange collapse and the second world war. Both events had important impacts from the accounting historical perspective; with the collapse of stock exchange market the importance of relevance and transparency of financial information was discovered. Also, Henry Ford began to mass produce in US. This emphasized the need for the cost information. After the second world war, the Toyota approach brought in other managerial and cost perceptions.
- Third Phase; the years between 1960-1980; This is where the first digitalization began with the Integrated Information Systems and the need for software for production. The technological changes also force the production styles to change and thus brought in new methods to calculate cost.

- Fourth Phase; 1980 and onwards: This phase can also be called the Cost Management Systems phase. This phase emphasizes on the fact that the outcome of these systems are not only used by the accounting but used by all the functional areas within the organization (Orhon Basık, 2012). Also, this phase had been categorized into four main titles by Robert Kaplan (Orhon Basık, 2012) (Blocher, Stout, & Cockings, 2010):

1. Seeing the fundamental transactions as reporting.
2. Focusing on the external reporting.
3. Monitoring the basic operational data therefor gathering more reliable and valid information for decision making.
4. Gathering the strategical cost information as part of complimenting course of management.

All this theorization aside where the world is at today is at the point where profit, marketability, sustainability, technological advancement are slowly becoming the outcomes of the major goal of creating value for companies. Creating value became more important and a longer-term objective than its predecessors. Especially now that it is obvious that those goals above are easily obtainable as an outcome if the value creation becomes the main long-term goal.

Even though digitalization became conspicuous in the past few years, the origins of it had started more than fifty years ago. Now if we take the industrial revolutions' timeline and overlap it with the phases of cost information above, we can easily assess the chart 1 below:

Chart 1

	Industrial Revolution 1.0 1795 – Mechanization led to agriculture being replaced by industry and factory systems. Use of coal leading to invention of steam engine and the use of steam power replacing the manpower.
	Industrial Revolution 2.0 1870 – Use of Electricity, Gas and Oil as resources which led to technological advancement and creation of internal combustion engine. Chemical synthesis and methods of communication (telephone and telegraph)
	Industrial Revolution 3.0 1969 – Use of Nuclear Energy led to the rise of electronics, telecommunications, and course computers. High level automation with Programmable Logic Controllers (PLC) and Robots.
	Industrial Revolution 4.0 Since we are still in this era, it is accepted to have started within the use of Internet. Concept of IoT

Now as it can be seen that the need for cost information and acquisition of this information has evolved in time. It is not only about changing the production line and technology and the methods but also it revolves a great deal about the value creation. There is no way of talking about value creation without talking about the non-financial information. Information of the cost is gained through cost accounting, which is the process of measuring, analyzing, and reporting which includes the information that is both financial and non-financial that is related to the cost of acquiring or using resources (Datar & Rajan, 2018). One of the uses of this information is to make decisions for managers. When it comes to creating this

information from raw data usually comes down to the purpose of it to be used later on. Therefor the strategical approaches play an important role at the stage of creating the cost information.

When it comes to managing the cost strategically these techniques are being used for decades under the "Contemporary Cost Management Systems":

- Balance Scorecard
- Value Creation
- Life Cycle Costing
- Activity Based Management and Costing
- Target Costing
- Total Quality Management

Based on what the manager wants to do the correct system or systems are applied accordingly whether it be to control the costs or decrease the costs. For that we come across with Life Cycle Costing, which contains two main theories one is Target Costing and the other one is Theory of Constraints. Target Costing focuses on the pre-production phase and The Theory of Constraints focuses on the production phase.

Modernize Everything Through Digitalization

Common perception for digitalization is the digital transformation. Going from analog to digital had been imperative in terms of accounting due to the decrease in clerical errors. Another common perspective of digitalization is making everything contemporary. However, as stated previously the digitalization of the information already started when the first use of non-manpower for information gathering and analyzing as digital transformation. So simply based on this, it is not enough to theorize that digitalization is enough to modernize everything. Because one of the important aspects of the modernism is to keep it always ahead of it's time or

simply just keep up with the time. In order to be able to achieve that, one must constantly evolve the current system. Therefor innovation is one of the fundamental tools in order to keep the systems modern. When it comes to implementing or adopting a contemporary management accounting system, innovation comes naturally with using an interactive approach. The interactive approach revolves around acting and adapting within the constant change whereas the diagnostic approach simply compares the success rate if the goal has been achieved. (Nazaripour & Ravand, 2019)

The need for Digitalization in Supply Chain

Right before the COVID-19 Pandemic, the talk of the global supply chain to be digitized was emphasized. Especially with the production lines becoming more and more complex within each day. As stated in the introduction the raw materials were usually imported and due to cheap labor, the production lines were carried abroad pre-pandemic. This had brought in many valuable suggestions both from the academia and practice to bring out the most effective way to share information in the supply chain. In order to achieve it, intensive utilization of Information and Communication Technologies are required (Klötzer & Pflaum, 2017). Thus, turning everything into "Smart" things. As a result, the supply chain management receiving the smart concept into its variables which are people, task, structure, and technology (Pfohl, Yahsi, & Kurnaz, 2015). Usually, the people part of this involves and requires the need for trust and the transparency (Bhimani, 2005). The technology, structure and task however requires the advancement and innovative approaches.

Post COVID-19 not only the wellbeing and social changes occurred but also very drastic changes occurred in the economical world. These drastic changes tipped the scales of world economy. Radical measures in Fiscal and Monetary policies were taken as a response to the pandemic on the scale of public and private sectors, such was the elevation of the sector debt. And then several regulations regarding to labor have been adjusted due to the decline in the revenue (Worldbank, 2020). Regarding to the cost drivers this

simply decreased the labor cost however it somewhat increased the cost of the materials because it became more difficult to move it around the world during pandemic. This situation was unexpected as a result the supply chain systems of businesses needed revisions. The rise of e-commerce due to curfews and social isolations was not the only digital change in the consumption.

Prior to the pandemic the digital entertainment was limited with younger generations, with the harsh conditions of lockdowns, it was also introduced to the older generations. Just to emphasize the power of consumption of digital products especially in the media and entertainment sector. The digital transformation had occurred along with music, movies, shows and video games quite sometime ago. Recently the importance of "smart" televisions were on the rise along with the use of consoles that enabled not only the video and arcade game concepts but physical activities such as Yoga and various Sports through Virtual Reality systems. Through digitalization the ratio of physical products to virtual products have changed also having a shift in the supply chain management for these companies. The rise of the e-commerce led to the need to increase in the quality of logistic services.

Conclusion

Digital transformation is inevitable. Thus, the digitalization is impossible to avoid, which is naturally decreased the cost of goods produced but increased the volume of the production. During the COVID-19 Pandemic, new production lines have been emerged especially in the service industry. Working from an office model have been replaced with home office in many businesses which led to decrease in the overhead costs, as being the major issue in measuring per unit.

At the beginning of 2020, due to the pandemic IMF and the world bank "gave away" big sums for monetary measure. Towards the end of 2020, as fiscal and monetary aid big sums were given away by authorities around the world, especially EU Bank. These

giveaways led to an increase in the price of gold and silver spot and the other valuable metals. This value change caused the increase in the raw material prices. However, as part of the steps taken by governments during pandemic, the state aids, deferring and discounts on tax has decreased the labor cost. This change in the raw material and labor prices caused a shift in the competition internationally. As a result, the measuring, controlling, and analyzing cost methods have changed. And this situation brought a search for new systems and methods in strategical management of production cost. The shift from analog to digital brings the “smart” approaches, therefor a “smart” supply chain method has become a vital necessity in the current state of business.

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International Economic, Financial, Social and Humanities Research

Economic crises and social events, epidemics, political factors, natural disasters, digital age, communication, leaders, people's abilities affect social and economic events. In the globalizing world, despite technological developments and the parallel developing information age, it is very difficult to access systematic scientific information. The aim of this study is to examine the economic, financial and social events experienced in the world and in Turkey and evaluate their effects and consequences. Since social sciences generally examine social events and the effects of human factors, it is quite difficult to reach clear results with controlled observations compared to science. Politicians, scientists, experts and sector managers are trying to find effective, efficient and sustainable solutions to social and economic events. The aim of this study, which is carried out in the field of finance, social and humanities, is to examine financial, economic and social events and to investigate what can be done for developments in the field of social sciences.

This valuable publication titled 'International Economic Finance Social, and Humanities Research' consists of studies in many different fields, including improvements and developments in the field of social sciences, and international qualitative and quantitative research. I would like to express my gratitude to my esteemed professors from different fields and universities for their efforts and contributions in the preparation of this study.

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I hope that the study will be useful to my esteemed professors and dear students and make significant contributions to the field of social sciences.

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