



T.C.

ANKARA YILDIRIM BEYAZIT UNIVERSITY
GRADUATE SCHOOL OF SOCIAL SCIENCES

**THE IMPACT OF THE MONETARY AND FISCAL POLICIES IMPLEMENTED BY
TÜRKİYE ON ECONOMIC GROWTH DURING THE ECONOMIC CRISES
EXPERIENCED IN 2001, 2008 AND 2020**

MASTER'S THESIS

Yavuz Selim KILIC

DEPARTMENT OF PUBLIC FINANCE

Ankara, 2024

2024

MASTER'S THESIS

Yavuz Selim KILIC

T.C.
ANKARA YILDIRIM BEYAZIT UNİVERSİTY
GRADUATE SCHOOL OF SOCIAL SCIENCES

**THE IMPACT OF THE MONETARY AND FISCAL POLICIES IMPLEMENTED
BY TÜRKİYE ON ECONOMIC GROWTH DURING THE ECONOMIC CRISES
EXPERIENCED IN 2001, 2008 AND 2020**

MASTER'S THESIS

Yavuz Selim KILIC

DEPARTMENT OF PUBLIC FINANCE

Assoc. Dr. Asuman CUKUR

Ankara, 2024

THESIS APPROVAL PAGE

The thesis written by Yavuz Selim Kılıç entitled “The Impact of The Monetary and Fiscal Policies Implemented by Türkiye on Economic Growth During The Economic Crises Experienced in 2001, 2008 and 2020” was unanimously/~~majority~~ accepted by the following jury as a Master's thesis in the Department of Finance at the Social Sciences Institute of Ankara Yıldırım Beyazıt University.

Jury Member	Acceptance / Rejection	Institution	Signature
Assoc. Dr. Asuman Çukur	Acceptance	Ankara Yıldırım Beyazıt University	
Assoc. Dr. Recep Yorulmaz	Acceptance	Ankara Yıldırım Beyazıt University	
Prof. Dr. Eda Yeşil	Acceptance	Kırıkkale University	

Thesis Defence Date: 22.08.20224

I certify that this thesis meets the requirements for a Master's Thesis in the Department of, Institute of Social Sciences, Ankara Yıldırım Beyazıt University.

Assoc. Dr. Muhammet Enes KALA
Deputy Director of the Institute of
Social Sciences

DECLARATION

I hereby certify that I have written this thesis entirely by myself and that I have not committed any unethical acts that violate patents or copyrights at any stage of the preparation or writing of this thesis. I certify that I have acquired all information presented in this thesis in accordance with academic and ethical guidelines and that I have properly cited all sources for the information and interpretations contained in the thesis.

Name: Yavuz Selim

Last name: Kılıç

Signature :



ABSTRACT

THE IMPACT OF THE MONETARY AND FISCAL POLICIES IMPLEMENTED BY TÜRKIYE ON ECONOMIC GROWTH DURING THE ECONOMIC CRISES EXPERIENCED IN 2001, 2008 AND 2020

KILIC, Yavuz Selim

Master, Department of Public Finance

Supervisor: Assoc. Dr. Asuman CUKUR

Agust 2024, 96 pages

Economic crises have been the subject of extensive research for years, providing valuable insights into their nature, causes, origins and triggers. These studies underline the importance of understanding crises for economic and fiscal sustainability. In this context, the aim of this study is to understand the nature of economic crises and contribute to the literature by examining which policies or policy components mitigate the effects of these crises. Specifically, the study examines the effects of monetary and fiscal policy components on economic growth in Türkiye from Q1 2000 to Q4 2023. In addition, the effects of the policies implemented during the financial crises of 2000 and 2008 and the pandemic crisis of 2020 on economic growth are analyzed separately. The study examines the policy components that help to mitigate the effects of crises. Fiscal policy instruments considered are interest-free government spending, public borrowing and taxes, while monetary policy instruments include nominal interest rates and inflation. In addition, macroeconomic variables such as unemployment, consumption and investment, which influence growth, are included in the analysis. Based on this data, an econometric model was created and analyzed using the Vector Error Correction Model (VECM). The results show that public spending, consumption and investment have a positive influence on economic growth, while tax revenue, borrowing expenditure, inflation, interest rates and the unemployment rate have a negative influence on economic growth.

Keywords: Efficiency, Growth, Non-Interest Public Expenditure, Nominal Interest Rate, VECM model

ÖZET

2001, 2008 VE 2020 YILLARINDA YAŞANAN EKONOMİK KRİZLER SIRASINDA TÜRKİYE'NİN UYGULADIĞI PARA VE MALİYE POLİTİKALARIN EKONOMİK BÜYÜMEYE ETKİSİ

KILIÇ, Yavuz Selim

Yüksek Lisans, Maliye Bölümü

Tez Yöneticisi: Doç. Dr. Asuman ÇUKUR

Ağustos 2024, 96 pages

Ekonomik krizler, yıllardır çeşitli araştırmalara konu olmuş ve bu krizlerin ne olduğu, nedenleri, nasıl oluştuğu ve tetikleyicileri üzerine birçok bilgi birikimi sağlanmıştır. Bu araştırmalar, ekonomik ve mali sürdürülebilirlik açısından krizlerin anlaşılmasının ne kadar önemli olduğunu ortaya koymaktadır. Bu bağlamda, bu çalışmanın amacı, ekonomik krizlerin doğasını anlamak ve hangi politika ya da politika bileşenlerinin bu krizlerin etkilerini azalttığını literatüre katkı sağlamak suretiyle incelemektir. Türkiye özelinde, 2000q1 ile 2023q4 arasında uygulanan para ve maliye politikası bileşenlerinin ekonomik büyümeye olan etkileri incelenmiş, daha sonra ise 2000, 2008 finansal ve 2020 Pandemi krizlerinde uygulanan politikaların ekonomik büyümeye olan katkısı ayrı ayrı olarak analize dahil edilmiştir. Krizlerin etkilerini hafifletmeye yardımcı olan politika bileşenleri araştırılmış, bu bileşenlerden maliye politikası araçları olarak faiz dışı kamu harcaması, kamu borçlanması ve vergiler; para politikası araçları olarak ise nominal faiz ve enflasyon seçilmiştir. Ayrıca, büyümeyi etkileyen işsizlik, tüketim ve yatırım gibi makroekonomik değişkenler de analiz kapsamına dahil edilmiştir. Bu veriler doğrultusunda bir ekonometri modeli kurulmuş ve bu model, Vector Error Correction Model (VECM) ile analiz edilmiştir. Analiz sonuçlarına göre kamu harcamaları, tüketim ve yatırım harcamaları ekonomik büyümeyi olumlu yönde etkilerken, vergi gelirleri, borçlanma harcaması, enflasyon, faiz ve işsizlik oranları ekonomik büyümeyi olumsuz etkilediği sonucuna varılmıştır.

Keywords: Etkinlik, Büyüme, Faiz Dışı Kamu Harcamaları, Nominal Faiz Oranı, Vektör Hata Düzeltme Modeli

ACKNOWLEDGMENTS

The author extends heartfelt thanks his advisor, Assoc. Dr. Asuman Çukur, for her invaluable guidance, advice, constructive feedback, encouragement, and insights throughout the research process.



TABLE OF CONTENTS

THESIS APPROVAL PAGE	i
DECLARATION	ii
ABSTRACT	iii
ÖZET	iv
ACKNOWLEDGMENTS	v
TABLE OF CONTENTS	vi
INDEX OF SYMBOLS AND ABBREVIATIONS	ix
INDEX OF FIGURES	x
INDEX OF TABLES	xi
INTRODUCTION	1
SECTION 1: WHAT IS PUBLIC FINANCE AND ITS RELATIONSHIP TO ECONOMIC GROWTH	4
1.1 Meaning of Public Finance	4
1.2 Aims of Fiscal Policy and Instruments	6
1.2.1 Fiscal Policy	6
1.2.2 Tools of fiscal policy	8
1.2.2.2 Tax Policy	8
1.2.2.3 Public Expenditure Policy	9
1.2.2.4 Government Debt Policy	12
1.3 Objectives and Tools of Monetary Policy	14
1.3.1 Objectives of Monetary Policy	14
1.3.2 Tools of monetary policy	15
1.3.2.1 Open Market Operations	17
1.3.2.2 Reserve Requirements	17
1.3.2.3 Discount Rate	17
SECTION 2: FINANCIAL CRISES IN TURKIYE AND WORLD	19
2.1 What Is An Economic Crisis, Types Of Economic Crises And Economic Approaches With Perspectives On Crises	19
2.1.1 What Is An Economic Crisis?	19
2.1.2 Types Of Economic Crises	21
2.1.3 Economic Approaches Developed Regarding The Formation Of Economic Crises 23	
2.1.3.1 Classical Economic Theory	23
2.1.3.2 Keynes' General Theory	24

2.1.3.3	Monetarist Approach	25
2.1.3.4	Marxist Approach	26
2.1.3.5	Rational Expectations Theory	27
2.1.3.6	Supply-Side Policy	28
2.1.4.	Models Of Economic Crises.....	28
2.1.4.1	Classic First-Generation Models.....	28
2.1.4.2	The Second-Generation Models	29
2.1.4.3	The Third- Generation Models	30
2.2	History of Crises	31
2.2.1	1873 - 1896 Economic Crisis: The First Known Crisis Of Modern Terms	31
2.2.2	1929: The Great Depression	32
2.2.3	1973: Oil Crisis and A New Concept: Stagflation	33
2.2.4	2008: Global Finacial Crisis	35
2.2.5	A New Crisis: Covid 19 And Its Global İmpacts	36
2.3	Crises experienced by Türkiye in the last century	37
2.3.1	November 2000 Banking, February 2001 Financial Crises and Transition Program to a Strong Economy	38
2.3.1.1	November 2000 Banking Crisis.....	38
2.3.1.2	The Financial Crisis Of February 2001.....	39
2.3.1.3	Transition Program to a Strong Economy	40
2.3.2	The Impression Of The 2008 Global Crisis On Türkiye.....	41
2.3.3	The effects of the pandemic crisis on Türkiye	42
SECTION 3: LITERATURE STUDIES ON HARMONIZATION OF MONETARY AND FISCAL POLICIES		44
3.	A Literature Review	44
3.1.	Studies Academics In Türkiye	45
3.2.	International Academics Studies	46
SECTION 4: ECONOMETRIC MODEL		52
4.1	Data and Methods	52
4.1.1	Data.....	52
4.1.2	Methods	53
4.3	Results and Discussion of The Found Result	55
4.3.1	Unit Root Tests	55
4.3.2.	Cointegration Analysis.....	56
4.3.3	VECM (Vector Error Correction Model)	58

4.3.4. Impulse Response Function (IRF) Analysis	59
4.3.5 Variance Decomposition	62
4.3.6 Granger causality test results	68
4.3.7. The implications of these factors throughout periods of crisis	69
SECTION 5: CONCLUSION	76
REFERENCES	78
APPENDIX 1: LITERATURE RESEARCH	90



INDEX OF SYMBOLS AND ABBREVIATIONS

ADF	Augmented Dickey-Fuller test
ARDL	Autoregressive Distributed Lag Bound Test
PP	Phillips–Perron test
BOE	Bank Of England
CBRT	The Central Bank of the Republic of Türkiye
ECB	European Central Bank
FED	Federal Reserve Bank
GDP	Gross Domestic Product
GNP	Gross National Product
IMF	International Money Fund
OECD	Organisation for Economic and Co-operation and Development
OPEC	Organisation of Petroleum Exporting Countries
PLS-SEM	Partial Least Squares Structural Equation Modeling
SVAR	Structural Vector Autoregressive
SVEC	Structural Vector Error Correction
VAR	Vector Autoregressive
VECM	Vector Error Correction Model

INDEX OF FIGURES

Figure 1: Equality of fiscal and monetary policy	12
Figure 2: Business cycle processes of the economy	20
Figure 3: Impulse-Response Function.....	61



INDEX OF TABLES

Table 1: Data Set	52
Table 2: Unit root test - Augmented Dickey Fuller (ADF) test	55
Table 3: Unit root test - Phillips–Perron (PP) test	56
Table 4: VAR Lag Order Selection Criteria	56
Table 5: Johansen Cointegration Test	57
Table 6: VECM of Results	58
Table 7: Variance Decomposition	62
Table 8: Granger Casuality tests results	68
Table 9: Regression Analysis Results for the Model Corrected for Autocorrelation	70
Table 10: Regression Analysis Results for the Model Corrected for Autocorrelation-for 2001 Crisis	72
Table 11: Regression Analysis Results for the Model Corrected for Autocorrelation-for 2008 Crisis	73
Table 12: Regression Analysis Results for the Model Corrected for Autocorrelation-for 2020 Crisis	74

INTRODUCTION

The most a crucial result of the acceleration of globalization after the 1960s was that it affected countries' economies both for better and for worse. The transfer of labor between countries has increased, capital accumulation has accelerated, and this has led to a deepening of financial markets. This situation led to a rapid increase in national products and the age of prosperity began.

Nevertheless, this circumstance has not caused the financial world to forget the devastation caused by the Great Depression of 1929. As everyone knows, the United States experienced the Great Depression, which quickly destroyed economies, particularly in Western Europe. Both the unemployment rate and economic activity fell to historically high levels. At this point, economists began to focus on the causes of the crisis and conclusions were drawn.

Even though capitalism seems to be a very logical option for economies, the systemic gaps created by the economic system in question could not be easily eliminated. When examining the historical processes of economic activities, it is an undeniable point that the economy of any country is subject to economic fluctuations in different periods and under different conditions. In this context, macroeconomic disturbances that affect every segment of society and the economy are areas to focus on.

There is an ongoing, deep debate in the literature about whether the role of macroeconomic policy in addressing financial crises is contractionary or expansionary. Some studies argue that contractionary policies ensure economic stability by controlling macroeconomic indicators such as inflation and public debt, while others assume that expansionary policies stimulate economic growth and accelerate recovery from crises. At this point, economists began to look for new theories and came up with the idea of the business cycle theory, which takes into account the conditions of expansion, recession and depression. This idea is cyclical, particularly with regard to the beginning and growth of the Industrial Revolution and the rise and fall of the prosperity of industrialized countries in particular.

But Türkiye, which is classified as an emerging economy, has a fragile economic structure as a result of the global economic crises, increased economic liberalization and the introduction of some measures to adapt to the new circumstances. Consequently, the accelerating effects of globalization have complicated political and economic decisions that could protect the country from global economic shocks.

Under the influence of this situation, a number of economic measures have been taken to reduce the impact of the economic crises that the country has experienced in the last century, and targeted measures have been taken to eliminate or reduce external shocks. These economic measures were implemented through monetary and fiscal policy.

As a result, Turkey faced the pandemic crises of 2001, 2008 and 2019. In response, the country intervened in the economic crises by using elements of its fiscal and monetary policies to solve them. Based on the aforementioned crises, this paper will examine how the economic policy policies introduced during the three crises have affected economic growth. A further explanation of the concept shows that the use of fiscal policy instruments to

intervene in the economy has an immediate effect, while the use of monetary policy instruments has a longer-term, medium-term effect.

In this context, the effects of the fiscal and monetary policy policies implemented in 2000 and 2023 on economic growth are considered. In addition, the contribution of monetary and fiscal policies applied by the economic leadership during the crisis periods in Turkey, namely 2001, 2008 and 2020, to overcome these crises is examined separately within the framework of the economic model. The effects of these policies are examined with the help of a "dummy" variable integrated into the economic model.

In the first part of this paper, we begin with a comprehensive examination of public finances. In this section, we will first define the basic concepts and principles that underlie public finance and provide a solid framework for understanding its scope and importance. We will look at the various dimensions of public finance, including its role in resource allocation, income distribution and economic stability. In addition, we will examine the historical development of public finance theories and their practical applications in today's economic systems.

Next, we will explain the objectives and instruments of fiscal and monetary policy. Fiscal policy, which focuses on government spending and taxation, aims to influence economic activity, redistribute income and ensure sound public finances. The main objectives of fiscal policy include promoting economic growth, achieving full employment and ensuring price stability. We will examine the various instruments of fiscal policy, such as government budgets, tax regulations and public spending programs, and their impact on the economy in general.

In contrast, monetary policy, which is overseen by central banks, focuses on controlling the money supply and interest rates in order to control inflation, stabilize the currency and promote economic growth. We will look at the main objectives of monetary policy, including inflation control, employment management and financial stability. We will also discuss monetary policy tools such as open market operations, discount rates and reserve requirements and how these tools are used to achieve the desired economic outcomes.

By examining the objectives and instruments of fiscal and monetary policy in depth, we aim to provide a holistic understanding of how these policies interact and contribute to a country's overall economic management and stability. This foundational knowledge will form the basis for a more in-depth analysis and discussion in the subsequent sections of this paper.

The academic literature on the impact of fiscal and monetary policy on global and Turkish economic growth is comprehensively covered in the third section of this thesis. This section looks at a wide range of academic studies, empirical research and theoretical analyzes that examine how fiscal and monetary policies have affected economic growth in different countries and regions.

We will first examine the global context and highlight key findings from notable research examining the effectiveness of these policies in different economic settings, both in developed and developing countries. This includes an assessment of different fiscal approaches, such as expansionary and contractionary policies, and their respective effects on economic indicators such as GDP growth, employment rates and inflation levels. We will also examine how monetary policy tools such as interest rate adjustments and quantitative

easing have been used by central banks around the world to stimulate economic activity and maintain stability.

We will then focus on the Turkish economy and provide an in-depth analysis of the unique fiscal and monetary policy strategies in Türkiye and their outcomes. This part of the section will provide an overview of the historical policy, the contextual factors influencing the policy decisions and the resulting economic performance. We will also look at the current challenges and policy responses in the Turkish context, drawing on recent studies and data to illustrate the dynamic interplay between fiscal and monetary policies and economic growth in Türkiye. By synthesizing the global and Turkish perspectives, this section aims to provide a nuanced understanding of the multifaceted impact of fiscal and monetary policy on economic growth.

The final and most crucial section of this paper focuses on the joint use of fiscal and monetary policy instruments and their impact on economic growth and crisis resolution during the above-mentioned crises. This section examines in detail how coordinated policy measures have been used to address economic challenges and promote recovery in times of financial turmoil. To this end, the econometric method of analysis is meticulously applied using the vector error correction model. Moreover, in line with the literature and consistent with this model, Granger causality tests, impulse-response functions and variance decomposition are later performed. This analytical approach involves the use of advanced statistical techniques to quantify the relationship between policy interventions and economic outcomes. We will construct an econometric model that incorporates relevant variables such as government spending, tax policy, interest rates and money supply to assess their collective impact on key economic indicators such as GDP growth, unemployment rate and inflation.

In addition, this section examines the time-dependent effects of fiscal and monetary policy, focusing on both their short-term and long-term effects. Using econometric methods, we will try to identify the different contributions of each policy and their interactions, and how coordinated policy action can strengthen economic resilience and accelerate recovery. By combining theoretical perspectives with empirical data, this section will provide a thorough assessment of how fiscal and monetary policies can mitigate the negative effects of economic crises and promote sustainable growth. Ultimately, this analysis will enrich the broader discussion on economic policy choices and offer insightful recommendations for future policy development and implementation.

SECTION 1: WHAT IS PUBLIC FINANCE AND ITS RELATIONSHIP TO ECONOMIC GROWTH

1.1 Meaning of Public Finance

With the impact of globalization, the government has a vital role in "regulation and supervision" in many areas, which has become a major concern. Especially in the face of increasing economic activities, the growing influence of the government has become undeniable. Thus, new perspectives have emerged in terms of public sector intervention in the economy through financial policy instruments.

The traditional view of finance assumed that the state was only responsible for the provision of certain goods and services. For example, the state was obliged to carry out public activities known as public goods, such as justice, defense and diplomacy. With industrialization, however, it seemed inevitable that the state would become involved in social, administrative and economic affairs, even if these were carried out by the private sector. In particular, the increasing influence of globalization made it impossible for the state's activities to be limited to purely public goods.

In light of these developments, a modern approach to finance emerged, and there was a consensus that the state should take a more active role in interfering in administrative, social and economic life, rather than just enforcing the law as the classical economists had suggested and protecting private property. The idea that the state should only intervene minimally in the economy, as advocated by liberal views, therefore underwent a revolution, particularly with the advent of Keynesian economics. The Keynesian view advocated a more effective role for the state in the economy.

The idea of state intervention in the economy first emerged with the earliest economic view known as "mercantilism". According to this view, there was a consensus that the state, or in other words the treasury, should accumulate gold and silver to create an economic surplus. They argued that the state should be strong (Heckscher, 2013). Later, the "Physiocrats", who paved the way for the establishment of finance in the modern sense and were the forerunners of liberalism, were the first school to argue against state intervention in the economy (Ware, 1931).

However, Adam Smith, the father of classical economics, popularized the idea of "laissez faire", which is particularly prevalent in Western economies and is seen as a justification for limiting government intervention in the economy. According to this theory, some economies, particularly in Western Europe, experienced rapid expansion following the acceleration of industrialization (Viner, 1927). As countries became more aggressive in their pursuit of rapid expansion, they simultaneously became less aware of the danger of crises.

The first devastating global crisis, the "Great Depression of 1929", which began in America, sparked considerable debate about how the then economically significant countries would intervene in this crisis, and policy makers significantly delayed their intervention in the economy. These developments marked a major impasse for capitalism (Bernstein, 1987).

The classics argue that there should be no government intervention in the economy because, according to the concept of the "invisible hand," any deviation in the economy would naturally return to full employment equilibrium. However, especially during the economic depression of "1929," major economies deviated from full employment equilibrium and had considerable problems returning to equilibrium. (Kurz and Salvadori 1998)

In this context, J.M. Keynes explained in his book "The General Theory of Employment, Interest and Money" that an economy can also be in equilibrium outside the equilibrium level of employment. He argued that if there was a deviation from the equilibrium level of employment, the government could intervene in the economy to restore equilibrium, even if the newly reached equilibrium level was different from the old one. (Schumpeter, 1936; Pigou, 1936)

The person who took Keynes' thesis of state intervention in the economy even further was Abba Lerner. According to Lerner, while the state was necessary to ensure full employment in the economy, it was also very important to maintain macroeconomic equilibrium in the economy by ensuring the efficiency of resource and income distribution. In this case, he deepened the views of Keynes and introduced the "functional finance" approach. (Lerner, 1943 and 1944)

According to the concept of functional finance, the most important financial policy instrument is the preparation of the state budget. The establishment of a budget is an essential instrument for the allocation of the resources required to carry out the economic activities of the State. This is because it was envisaged that this instrument, which is used when the state intervenes in the economy, would establish the balance between "social product - employment equilibrium" and "price stability – growth". To clarify, in an inflationary environment, aggregate demand should be reduced by cutting public spending and increasing taxes, thus creating a budget surplus. In a deflationary environment, on the other hand, it is necessary to increase public spending, reduce taxes, increase aggregate demand and create a budget deficit in order to ensure economic equilibrium. These policy components ensure that aggregate demand remains at a certain level. In this situation, price stability would be achieved and the economy would be in equilibrium at full employment. (Lerner, 1943 and 1944)

Another goal of the state is to keep the interest rates required for investment stable. To explain this, the state should control interest rates through the borrowing channel, which is an instrument of fiscal policy. That is, if the state wants to increase market interest rates, it will borrow money; otherwise, it will maintain the interest rate that guarantees the efficiency of its investments by paying off its public debt. (Şen and Kaya, 2015)

Taken together, public finance is a branch of science that is necessary for the state to act through public expenditure and public revenue. Public finance is not only a discipline that provides the necessary tools to intervene in the economy. It has an unshakable influence on the economy and the social and administrative structure. (Rosen, 1992)

1.2 Aims of Fiscal Policy and Instruments

1.2.1 Fiscal Policy

Public finances have the necessary instruments to influence economic indicators and facilitate the implementation of economic policy by political decision-makers. While public spending is the most important tool within public finance in terms of its impact on the economy, tax and borrowing policies also have a major influence on economic policy. (Rosen, 1992)

The general objectives of fiscal policy can be divided into two categories: Ensuring economic stability and promoting economic growth. However, in addition to the two main objectives of fiscal policy, it should not be forgotten that there are various instruments that not only affect macroeconomic indicators but also influence economic development. Therefore, it is necessary to list these other instruments as follows: (Brahmbhatt and Canuto, 2012)

First, achieving a balanced budget: Maintaining the balance between revenue and expenditure and minimizing budget deficits or surpluses is one of the main objectives of fiscal policy. This creates a sustainable economic environment by reducing the need for borrowing. A balanced budget can therefore promote economic growth. In addition, a budget surplus can lead to more funds being made available for infrastructure investment and research and development activities, which can promote long-term growth. (Allsopp and Vines, 2005)

In addition, fiscal policy can aim to increase competitiveness through tax reforms and incentives. This can include policy measures. These include improving the business environment, encouraging investment and supporting exports. This can contribute to sustainable economic growth, in particular by accelerating industrialization and increasing competitiveness.

Secondly, fiscal policy can have a significant impact on the labor market, with the aim of reducing unemployment and promoting job creation. This can be achieved through various measures, such as increasing public spending on infrastructure projects, which not only stimulate economic activity but also create employment opportunities. In addition, tax incentives or subsidies to the private sector can encourage companies to expand their workforce and thus reduce unemployment. Such measures not only alleviate immediate unemployment, but also contribute to long-term economic growth by integrating more people into the productive economy. As economic growth accelerates, a virtuous cycle is created in which increased employment further boosts consumer spending and investment, thus strengthening the growth path.

Thirdly, controlling inflation is another key objective of fiscal policy, particularly in maintaining macroeconomic stability. In an inflationary environment, where rising prices undermine purchasing power and create uncertainty, fiscal policy can act as a stabilizing force. Policy makers can raise taxes or reduce public spending to curb excessive demand and thus help to dampen inflationary pressures. Targeted tax increases on goods and services that fuel inflation or cuts in government spending in non-essential areas can dampen demand

without having a major impact on overall economic growth. In addition, fiscal policy measures can be coordinated with monetary policy to increase their effectiveness in achieving price stability and ensuring that inflation does not get out of control and disrupt economic equilibrium.

Finally, fiscal policy can be an effective tool to promote social welfare and equity within society. Through a strategic allocation of taxes and public spending, fiscal policy can be geared towards improving income distribution, reducing poverty and improving social services. For example, progressive taxation can ensure that people with higher incomes pay more into the public purse, while targeted social programs can support lower-income groups and thus reduce economic inequalities. Investments in healthcare, education and social security systems not only improve the quality of life of citizens, but also lay the foundation for sustainable economic growth by creating a healthier, better educated and more productive workforce. These policies contribute to a more inclusive economy in which the benefits of growth are distributed more evenly across different segments of society. These objectives provide the general framework for a country's fiscal policy and may vary depending on economic conditions and objectives. Policy makers should also bear in mind that these policies will not only affect the economic structure, but will also have a significant impact on administrative and social structures. (Auerbach et al., 2010)

The idea that the state should intervene in the economy became inevitable with the economic crisis of 1929. This crisis led to an expansion of the role of the state in the economy within the framework of Keynesian thinking. However, while the 1940s are seen as a time when state policy had a significant impact, state intervention in the economy in the 1960s brought with it some problems. Thomas Hobbes referred to the supremacy of the state as the "Leviathan state". In situations where economics and politics are intertwined, government fiscal policy is therefore an inseparable component. (Kuşat and Dolmacı (2011)

This situation has been the subject of study in the public finance literature and was prominently presented as "Public Choice Theory" in James M. Buchanan and Gordon Tullock's work "The Calculus of Consent: Logical Foundations of Constitutional Democracy" (1962). This book is one of the foundational works that form the basis of public choice theory and serves as an important reference in the field. (Buchanan and Tullock 1965)

Public choice theory describes a field of economics that studies how the government allocates resources and formulates public policy. It looks at the various preferences of individuals and society and analyzes their impact on the general welfare of society. Public choice theory develops various models and analyzes, particularly in areas such as public spending, taxation, regulation and the economic impact of public policy.

This theory is generally based on the assumption that individuals act rationally and seek to maximize their own interests. However, it also takes into account situations in which individuals do not have complete information or do not act completely rationally in some situations. In particular, politicians act with the motivation to maximize their votes and voters act with the motivation to turn to the politician who offers them the best service. This leads to the state growing. (Facchini, 2018)

Public choice theory is an important tool in the formulation and evaluation of public policy. It provides insights into the effective allocation of public resources and helps identify the most appropriate policies to meet various societal needs.

1.2.2 Tools of fiscal policy

1.2.2.2 Tax Policy

Taxes are compulsory charges levied by a government on citizens or businesses to finance public services and promote the general welfare of society. Taxes are usually levied from various sources, such as income, consumption, wealth and property, and provide revenue for the national budget. There are also different types of taxes, the most common of which in Türkiye: (Turan, 2008)

Income tax: Income tax is levied on the income of individuals and companies and generally applies to income, salaries, interest and capital gains within a country.

Value-added tax (VAT): A tax that is added to the value of goods or services. VAT is paid by the end consumer and is levied at the production and sales stage.

Corporate income tax: Corporate income tax is levied on the profits generated by companies and usually affects the income of companies and can be levied at different rates in different countries.

Property tax: A tax levied on property owners. Property tax is usually calculated based on the value of real estate properties.

Excise tax: A tax levied on certain consumer goods, e.g. alcoholic beverages, tobacco products and luxury vehicles.

Tax policy refers to the strategies and implementations of a government in relation to its tax system. The objectives of these policies include increasing government revenue, improving social welfare, promoting economic growth, regulating income distribution and funding public services. Tax policy not only has a significant impact on the macroeconomic indicators of economic growth, unemployment and inflation, but also on economic development. (Turan, 2008)

The five types of taxes mentioned above can be divided into direct and indirect taxes. Direct taxes may prove to be the most reliable types of taxes in terms of resource allocation. Consequently, it is possible to allocate resources to specific areas through tax exemptions or deductions provided in these taxes. In addition, the government can grant special benefits such as tax reductions, exemptions or incentives to promote certain sectors or activities for economic growth and unemployment reduction. For example, tax concessions can be used to promote research and development activities. Such a path offers effective benefits especially to sectors that use resources efficiently and can influence economic growth. (Turan, 2008)

However, while direct taxes inevitably guide economic policy, this may not be the case with indirect taxes. In particular, indirect taxes levied on goods and services produced may lead to an inequitable distribution of income. A poorly administered indirect tax system can lead to distortions in the prices of goods and services. This situation can disrupt price stability and lead to inflationary pressures in the economy.

For a tax policy to achieve its objectives, certain conditions are necessary. First, tax policies establish the tax base by determining the income, expenses or assets subject to taxation based on factors such as income levels, consumption patterns and property ownership. They also determine the tax rates that are applied to the types of taxes within the established tax base, which can be adjusted to achieve specific goals such as increasing tax revenues or promoting economic activity. (Vogel and Zolt, 2008)

In addition, tax policies may offer special incentives, such as tax deductions, tax exemptions or incentives to promote certain sectors or activities, such as research and development. In addition, tax policy may include provisions for tax administration and management to support an effective system of tax collection and administration. Measures can be taken to ensure an equitable distribution of the tax burden, reduce income inequality, protect low-income groups and prevent tax evasion to achieve tax justice. (Romer, C. D. and Romer, D. H., 2010)

Ultimately, tax policy aims to achieve economic and social objectives, including stimulating economic growth, reducing unemployment, promoting environmental sustainability and funding social services. As tax policy is complex and multi-layered, it varies from country to country depending on economic conditions, social structures and political preferences. Therefore, careful design and continuous review of tax policy is necessary for its effective implementation. (Daniela, Gabriela and Andreea, 2020)

Automatic stabilizers are political policies or mechanisms that serve to balance out economic fluctuations and ensure economic stability. Ultimately, taxes act as one of the automatic stabilizers in economic crises and play an important role as self-regulatory mechanisms in the economy. Governments can respond to economic crises by actively using taxes as a fiscal policy instrument. During economic crises, economic management can increase the disposable income of households and companies by cutting taxes. This stimulates overall demand and thus promotes economic recovery. Tax incentives and tax exemptions for certain sectors or activities can promote economic growth by increasing investment and employment.

1.2.2.3 Public Expenditure Policy

The above-mentioned modern concept of finance also changed the role that the government was to assume in the areas of economics and finance. Especially after the Second World War, the government came to the fore in revitalizing the infrastructure in Europe. States began to increase public spending to modernize Europe. At this point, the idea that the government should play a role not only in the economic order but also in the social order came to the fore. (Facchini, 2018)

Public expenditure refers to spending by the government or public sector to fund various services and projects. These expenditures are typically financed through tax revenue, borrowing or other sources. Public expenditures are made in various areas such as education, health, infrastructure, security, defense and social welfare. Essentially, public spending serves to improve the general welfare of society, provide public services and promote economic growth. (Paternostro, Rajaram and Tiongson 2007)

In particular, the increase in public spending, one of the most important instruments of fiscal policy, has led to a more active role of the state in economic and social life. On the other hand, the views of Keynes and A. Wagner on public spending have contributed the most to this situation, although these views were in conflict with each other. These different views centered on the question of whether public spending should be considered internal or external. (Arisoy, 2005)

Firstly, as far as Wagner is concerned, economic growth will lead to an increase in public spending. This is because economic growth will inevitably lead to an increase in economic activities, thus creating the inevitable expenditures that the public spending. In particular, the new economic, financial and legal order created by industrialization has made it necessary for the state to take a passive role in areas that go beyond the basic functions of the public, such as justice, defense and security. Consequently, Wagner argued that public spending would increase due to economic growth (Aksoy, 1991).

Secondly, while Wagner views the increase in public spending as an internal variable, Keynes views the increase in public spending as an external variable. According to him, when the economy deviates from the equilibrium level, the government has to increase public spending in order to restore equilibrium. Therefore, the government contributes to economic growth through external interventions. (Magazzino, Giolli and Mele, 2015).

Moreover, according to Buchanan, who criticizes Keynes' opinion, the increase in public spending may be perceived positively by voters, but it can lead to a misperception of the resulting tax burden. This situation is referred to as "fiscal illusion" or "fiscal misperception" (Buchanan and Roback, 1987)

Musgrave is a prominent figure in the field of public finance and economics, particularly known for his contributions to public finance theory. Richard Abel Musgrave, an American economist, made significant contributions to the understanding of government taxation and spending. One of his most notable contributions is the theory of "public finance as public economics", which emphasizes the role of government in promoting economic welfare through tax and spending policies. Musgrave argued that the government should intervene in the economy to correct market failures and redistribute income to achieve social equity and economic efficiency. (Musgrave, 1996)

Musgrave also introduced the concept of the "three functions of government spending": Allocation, distribution and stabilization. According to Musgrave, government spending should aim to allocate resources efficiently, redistribute income fairly, and stabilize the economy by managing aggregate demand. (Buchanan, 1960)

Alan T. Peacock and Jack Wiseman made important contributions to the discussions on public spending and economic policy, particularly in the post-World War II period, particularly in the 1960s. According to them, wars, shortages and economic crises, i.e.

exceptional times such as economic and political unrest, lead governments to resort to tax increases to cover the costs incurred. The citizens of the country are expected to accept the increased taxes during these extraordinary times in order to cope with the extraordinary taxes. (Peacock and Wiseman 1961)

As a result of increased compliance, government tax revenues will increase, prompting governments to undertake more public spending to mitigate the effects of such shocks. Furthermore, it is believed that the increased taxes will not return to previous levels even after the political and economic shocks subside. Due to the tax increases and the subsequent processes, public spending will show considerable jumps. This situation is referred to as the "crowding-out effect" (Henrekson, 1990)

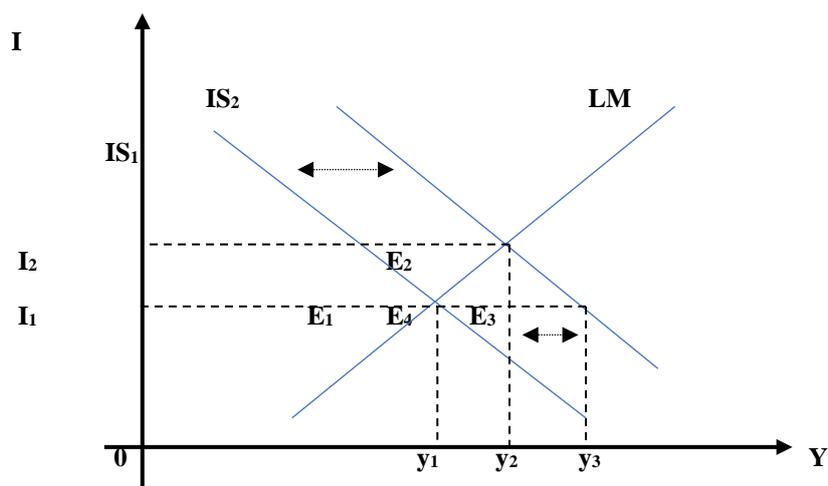
The country that forms the basis for the creation of this hypothesis is the United Kingdom. Peacock and Wiseman included this country in their analyses from 1890 to 1960. While Wagner famously attributed the increase in public spending to an increase in state activity, Peacock and Wiseman found that governments resorted to increased public spending as a result of political and economic depressions. In this context, governments will raise tax rates to cover the increased public spending. (Akalin and Ünüvar 2020)

To summarise, there is an undeniable link between public spending and public revenue and both items increase significantly in exceptional times, which is referred to as the "crowding out effect" (Peacock, 1990)

In situations where government intervention in the economy becomes necessary, one of the most important tools of fiscal policy, public spending, can be used to intervene in the economy. By increasing public spending, the government injects resources into the economy.

However, this intervention has both advantages and disadvantages. One of these disadvantages can be explained as follows: Government intervention in the economy through public spending ultimately leads to an increase in market interest rates. The increase in interest rates leads to higher interest rates on loans needed for capital investment, which in turn increases the cost of loans to be used by the private sector, leading to postponement of private sector investment decisions. Ultimately, both the cost of credit and private sector investment will fall. This situation is known as the "crowding out" effect. (Carlson and Spencer, 1975)

Figure 1: Equality of fiscal and monetary policy



Source: Arranged by author

The crowding-out effect can be analyzed using the IS-LM model, which represents an equilibrium in both the money and goods markets. At equilibrium point E1, both the planned total expenditure on the goods market and the real demand for money on the money market are balanced with the real money supply, so that both markets are equal. In this equilibrium, the production level is y_1 and the equilibrium interest rate is I_1 . If the government increases public spending in response to a negative external shock, the IS curve shifts from IS_1 to the right to IS_2 and leads to a new equilibrium at point E2. This shift leads to a higher equilibrium interest rate, I_2 . Since the equilibrium interest rate is now higher, the investment cost increase by this new rate, I_2 . Consequently, the crowding-out effect occurs, reducing the amount of investment to the range E3-E4 due to the higher interest rate. (Smith, 2020)

To summarize, an increase in public spending boosts demand, which generally leads to an increase in interest rates. Rising interest rates can reduce private sector investment and consumption as companies and individuals struggle to access credit and their costs increase. Consequently, an increase in public spending reduces private sector economic activity or, in other words, the trickiest part of this issue is the decline in macroeconomic indicators and economic growth.

1.2.2.4 Government Debt Policy

Public debt, also known as sovereign debt, involves the issuance of debt instruments by a government or public entity to secure the funds necessary for a variety of purposes. These purposes include financing public projects, addressing budget deficits, dealing with economic crises or providing essential public services. When a government raises debt, it usually does so through various financial instruments such as bonds, treasury bills or other securities. This borrowing allows governments to access immediate capital without having to raise taxes or cut spending, which can be crucial during economic downturns or when funding large infrastructure projects. Public debt plays a critical role in economic management as it allows governments to invest in development and respond to economic challenges while spreading the cost of these investments over time. (Rice, 2022)

However, the accumulation of government debt requires careful management, as high debt levels can lead to increased interest payments and potential impacts on fiscal sustainability. Effective debt management involves balancing the need to borrow with the ability to service debt and maintaining investor confidence to ensure that the cost of borrowing remains manageable. This is usually done through financial instruments such as government bonds. These bonds involve interest payments to investors who lend money to the government for a set period of time. These interest payments allow investors to earn income from the borrowing (Reis, 2022).

After the severe devastation suffered by Western European nations after World War II, the need to modernize these nations became inescapable. As a result, governments began to increase public spending, which led to ballooning budget deficits and prompted governments to resort to public borrowing to cover these deficits (Meijdam, Ven & Verbon, 1996).

Especially during economic crises, the escalation of market failures and a recessionary economic situation made state intervention necessary. This situation highlighted the importance of maintaining debt sustainability, as uncontrolled debt can lead to financial risks. (Fournier and Fall, 2015)

Despite the plethora of indicators, the most important and well-known criterion for debt is the Maastricht debt concept. This concept describes the rules for limiting the public debt and budget deficits of European Union (EU) member states following the signing of the Maastricht Treaty in 1992, which was intended to strengthen the EU's economic and monetary union. (Bloch and Fall, 2015)

The basic elements of the Maastricht debt concept include:

Debt limit: EU member states may not have public debt exceeding 60% of their GDP.

Budget deficit limit: EU member states may not have a budget deficit of more than 3% of their GDP.

These criteria were established in order to maintain the economic stability of the EU member states and guarantee the security of the common currency, the euro. Compliance with these criteria is an important prerequisite for countries wishing to join the eurozone.

Nevertheless, there have been certain difficulties in putting the Maastricht borrowing concept into practice. In particular, many EU countries have difficulties in fully complying with these requirements, as they often overshoot the mark in terms of public debt and budget deficit limits. Within the eurozone, this has led to financial crises and economic imbalances. As a result, the sustainability and effectiveness of the Maastricht debt concept has been repeatedly debated and amended over time. (Missale & Giavazzi, 2019)

In summary, public borrowing may help the government to finance public services and economic development if it is carefully managed and supported by sound economic policies. However, debt crises can result from excessive borrowing or inefficient spending plans that jeopardize long-term economic stability. Careful control of public borrowing policy is therefore necessary.

1.3 Objectives and Tools of Monetary Policy

1.3.1 Objectives of Monetary Policy

Before the First World War, the financial system was still in its infancy. Banks were just moving to the center of the economic world. At that time, money was generally an instrument used for transactions. However, the development and deepening of the financial system and the increasing diversity of assets brought other functions of money onto the agenda. Keynes noted that the use of money could be motivated not only by transactions, but also by precaution and speculation. This situation made it necessary to protect the value of money both internally and externally, and the instruments used to achieve this are monetary policy.

Monetary policy is the set of economic measures taken by a country's central bank or monetary authority to influence the economy. Its main objective is to maintain economic stability by regulating the money supply and interest rates. By adjusting these variables, monetary policy attempts to achieve several important goals, including controlling inflation, promoting economic growth and reducing unemployment. Central banks use various tools and strategies, such as changing interest rates and conducting open market operations, to steer the economy toward these goals and ensure overall financial stability. (Friedman, 1982)

Today, central banks, particularly in Europe and the United States, are responsible for the implementation of monetary policy. The top priority of almost all of these central banks is to ensure price stability. The price stability achieved through the use of monetary policy instruments will therefore ensure the maintenance of macroeconomic equilibrium. In addition, maintaining price stability will lead to the maintenance of financial stability in the economy by eliminating internal or external shocks in the economy. (Greenspan, 1993)

Price stability is defined by former Federal Reserve (Fed) Chairman Alan Greenspan as follows: "It refers to the condition in which economic decision makers need not take into account changes in the general price level when making decisions about consumption, investment and savings." It is defined as (Greenspan, 1966). Ensuring price stability greatly supports the strategies of countries pursuing inflation targeting in the medium and long term. This is because inflation targeting is an issue that increases the sustainability and reliability of targets in the economy. (Svensson, 2010)

Economic growth can be defined as an increase in the production of goods and services compared to the previous year. It indicates that economic growth has taken place, investment has increased and unemployment may be decreasing. It is the result of price stability, which is implemented to ensure sustainable economic growth and keep inflation under control. When inflation is 1-2% in developed countries and 4-5% in developing countries, this generally means that price stability has been achieved. When price stability is achieved, high employment rates can be achieved. (Castelnuovo, Nicoletti-Altamari and Rodriguez-Palenzuela 2003)

Another objective of monetary policy is to ensure full employment. The classics define full employment as the point at which supply and demand in the economy are balanced, i.e. the utilization of all means of production. They assume that the state should not intervene if

there is an imbalance in the economy, as the economy will return to the equilibrium of full employment. In this respect, Keynes disagreed with this theory, which in their opinion led to the employment of all workers. In his opinion, a lack of effective demand in the market cannot ensure full employment in the market. In such a situation, the economy reaches an equilibrium and this equilibrium is the equilibrium of underemployment. He assumes that in such an equilibrium, voluntary unemployment also occurs in the economy. (Tanyeri, 1998)

The financial markets are a living organism consisting of suppliers and demanders of funds. Those who demand funds can borrow at affordable interest rates and those who supply funds can make a profit. It is good for the economy when the funds market is in balance. But a financial shock can disrupt this balance. In such a situation, the atmosphere of stability and confidence in the economy disappears, and negative sentiment about the future influences the economic decisions of individuals and companies. For example, a financial shock increases interest rates; a company that needs capital for investment will not be willing to invest at these rates. This could lead to people being less employed. Since the spillover effect of crises is thought to be strong and the financial sector is the lifeblood of the economy, these two effects lead to a deterioration in macroeconomic indicators. (Eichengreen, 2004)

Monetary policy is often used in conjunction with other economic policy instruments to maintain economic equilibrium. Examples include influencing the structure of the economy through spending and taxation, market regulation, competition policy, structural reforms such as investment in education and infrastructure, and exchange rate policy, to name but a few. In particular, a monetary policy that harmonizes with fiscal policy is considered the most indispensable political component for ensuring price and financial stability. This is because monetary policy and fiscal policy are often used together to achieve economic goals. For example, when monetary policy moves into an easing phase, i.e. when interest rates are lowered, fiscal policy is usually budgetary. It can stimulate the economy by increasing the deficit. Similarly, the shift to a tightening program by raising interest rates in monetary policy can be supported by fiscal policy and budgetary policy. (Davig and Leeper, 2011)

1.3.2 Tools of monetary policy

There are direct and indirect instruments of monetary policy. Let us now examine their meaning.

The first is that a central bank can use non-indirect monetary policy instruments to act in the economy without pursuing any intermediate objectives. In other words, it is a type of monetary policy when a central bank directly changes the money supply or interest rates to a certain level in order to achieve its economic goals. In this type of policy, the central bank directly regulates interest rates and/or the money supply in order to manage economic activity and maintain price stability. (Mankiw, 2010: 572-578)

Interest is a type of fee paid or received for the use of a debt or investment. It is generally understood to be the amount paid for the use of a loan. The interest received by the lender is called "interest" and the interest paid by the borrower is called "debt interest". Interest is an important financial instrument for both lenders and borrowers. Lenders earn from interest, while borrowers receive funds for borrowing or investing. (Mishkin, 2018)

Based on these explanations, interest rates are crucial instruments in both interest rate policy and monetary policy that significantly influence economic activity. Interest rate policy encompasses the central bank's actions to set and adjust interest rates in order to achieve its economic goals. Although the central bank uses various monetary policy instruments to maintain economic stability, interest rates are a central part of this strategy. They play a central role in shaping economic conditions and the direction of overall economic policy.

So how is the equilibrium interest rate formed in the economy? To understand this phenomenon, you first need to know what money supply and demand mean.

Firstly, the money supply refers to the total amount of money in the economy. This includes the banknotes and coins that are in physical circulation, as well as the reserves and deposits held by banks. It also includes the money printed and put into circulation by the central bank. The money supply determines the level of liquidity in the economy and influences economic activity. The central bank controls the money supply with monetary policy instruments and attempts to achieve its economic goals. (Mankiw, 2010: 572)

Secondly, the demand for money refers to the need for money by individuals and businesses. This includes consumers' demand for money for purposes such as paying daily expenses, managing their accounts and storing cash for emergencies. It also includes companies' demand for money to run their business activities, pay their employees' salaries and finance their operations. The demand for money is influenced by various factors such as interest rates, economic confidence and inflation expectations. (Mankiw, 2010: 581)

The relationship between money supply and demand has a significant impact on interest rates in the economy. Interest rates are a value that indicates the balance between money supply and demand. The central bank controls the money supply by adjusting interest rates and thus influences the demand for money in the economy. In addition, money supply and demand are also important for maintaining economic equilibrium and assessing the impact of economic policy.

Moreover, controlling inflation is one of the main tasks of central banks, and the most important policy component for this purpose is interest rates. They can adjust interest rates to achieve a certain inflation target or to keep inflation within a certain range. In general, interest rates are raised to control high inflation, while interest rates can be lowered to promote low inflation. (Mishkin, 2001)

Many central banks such as the Fed and the BOE do not intervene directly in the money market. This intervention is referred to as indirect intervention.

Indirect monetary policy refers to the approach in which a central bank influences the money supply and interest rates through intermediaries or specific instruments rather than making direct adjustments. Instead of directly setting the money supply or interest rates at a certain level, the central bank uses indirect methods to control these economic variables. This approach usually involves instruments such as adjusting banks' reserve ratios, conducting open market operations and setting target interest rates. By using these mechanisms, the central bank attempts to achieve its economic goals and stabilize the economy. (Mankiw, 2010: 578)

1.3.2.1 Open Market Operations

Central banks can influence market liquidity by buying and selling financial instruments such as government bonds or securities. Through these transactions, they can increase or decrease the money supply and thus influence interest rates and credit conditions. Open market operations give central banks the opportunity to directly influence the money supply and interest rates. In order to achieve monetary policy objectives, central banks can use these operations to control economic conditions. For example, to stimulate the economy, a central bank may purchase government bonds to inject liquidity into the market and lower interest rates. Conversely, in the event of overheating, the central bank can withdraw excess liquidity by selling bonds and raising interest rates. In this way, central banks use open market operations to promote price stability, economic growth and employment. (Rocheteau, Wright & Xiao, 2018)

1.3.2.2 Reserve Requirements

Reserve policy refers to the framework of regulations and guidelines established by a central bank to determine the amount of reserves that commercial banks must hold. These policies play a critical role in managing and monitoring these reserves, including provisions on how banks must allocate and use their required reserves. Central banks set specific rules and regulations for the types of assets that banks can use to meet their reserve requirements, as well as the operational procedures for managing these reserves. Typically, reserve policies involve the setting of reserve ratios, i.e. percentages of deposits that banks must hold and are not allowed to lend. These rates are an important instrument for influencing the expansion or reduction of bank lending. By adjusting the minimum reserve ratios, the central bank can effectively control the amount of money that banks can lend and thus influence the overall liquidity in the banking system. This in turn helps to control the availability of credit and ensure economic stability. Reserve policy is intended to promote both economic stability and price stability by managing the liquidity of the banking system. It is a flexible tool that the central bank can modify in response to changing economic conditions and evolving monetary policy goals. Adjustments to reserve requirements are made with the intention of influencing macroeconomic factors such as inflation, economic growth and financial stability. (Weiner, 1992)

1.3.2.3 Discount Rate

The discount rate is the interest rate at which a central bank or similar financial institution lends to commercial banks or other financial institutions. This rate usually represents the cost to commercial banks of borrowing money from the central bank to meet short-term liquidity needs or to expand their lending capacity. These loans are usually short-term and require the borrowing banks to provide collateral. The terms of these loans, including the interest rate, are set by the central bank. (McNees, 1993)

In addition to its role in providing liquidity, the discount rate is an important instrument of a country's monetary policy. By adjusting the discount rate, the central bank can influence general credit conditions and economic activity. If the central bank raises the discount rate, it becomes more expensive for commercial banks to borrow money, which can lead to a reduction in the monetary base and a decline in the supply of credit. Conversely, lowering the discount rate makes borrowing cheaper, which can increase the monetary base and expand the availability of credit. This in turn can increase the money supply and stimulate economic growth. The discount rate is usually set and announced by the central bank during its monetary policy meetings. It is regularly adjusted to reflect changes in economic conditions and to bring it in line with the central bank's monetary policy objectives. (Mankiw, 2010: 578)



SECTION 2: FINANCIAL CRISES IN TURKIYE AND WORLD

2.1 What Is An Economic Crisis, Types Of Economic Crises And Economic Approaches With Perspectives On Crises

2.1.1 What Is An Economic Crisis?

An economic crisis is the term used to describe the circumstances under which the economy of a nation or region suddenly and frequently deteriorates. These circumstances are usually characterized by a significant decline in economic indices, including higher unemployment, business bankruptcies, falling prices for goods and services, and loss of income. Economic crises can have many different causes, but the most common include things like financial speculation, problems with credit and credit markets, imbalances in supply and demand, unstable political conditions and natural disasters. Consequently, there are numerous definitions for this term, as economic crises are very diverse.

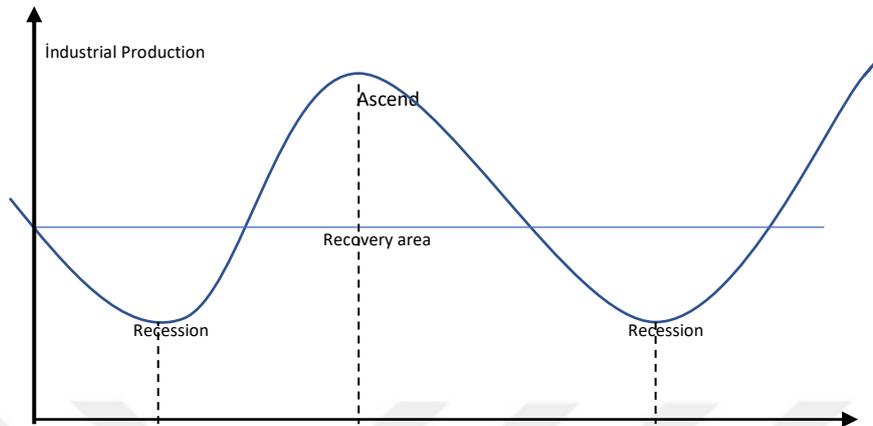
As a result of these developments, business cycle theories began to be used to explain economic fluctuations in national economies. Lucas defined business cycle fluctuations as trend changes in the gross national product (Lucas, 1980). Pigou also explained that increases and decreases in employment levels create a cyclical dynamic (Pigou, 1927). Hansen also defined business cycle theories as fluctuations in employment, national income and price indices, which are macroeconomic indicators. (Hansen, 1964:4)

Schumpeter, who further deepened the concept of crisis, looked at these fluctuations from a different perspective. In his economic view, "innovation" is the only thing that can unbalance an economy that has always been in equilibrium. The entrepreneur's search for and invention of innovations can revolutionize the economy. In adapting this innovation to the economy, creative destruction occurs when all or almost all of the obsolete elements of the economy are recommended. The main idea that emerges from this definition is that economic growth itself is a cyclical fluctuation. (Schumpeter, 1939 - Kuznets, 1940)

These theories are based on the views of certain authors and take into account the fact that economic activity has a variable long-term course and the reasons why the phases of economic development — recovery, prosperity, contraction and crises — occur in different periods, such as 1–12 or 2–8 years. The effects and consequences of the waves that occur during these development phases continue to have an impact until the next wave. Not to mention that these waves have a peak and a trough. These periods of crisis can affect a variety of industries, especially in countries where liberal economic concepts were used to build the economic infrastructure. (Diebold and Rudebusch 1994).

The above-mentioned definition of the dual situation is also used by the Bureau of Economic Research (NBER). According to this definition, the first point at which the decline begins, when the economy transitions from the expansion phase to the downturn phase, is the peak, which is considered the turning point of the economic wave. After the peak of the economy, crises occur and economic activity begins to slow down, it continues and the trough is reached. This trough is the point at which the downturn phase ends and economic activity picks up again.

Figure 2: Business cycle processes of the economy



Source: Arranged by the author.

In accordance with the information available, the business cycles consist of four phases. These are the phases with peaks and troughs between the phases of economic downturn and upturn. At the lowest point in the downturn phase, it can be seen that economic activity has slowed significantly and a crisis or depression has set in. At this point, the country enters a recession and if this situation continues for a long time, the economy becomes depressed. During this time, there is a sharp decline in production, consumption and investment spending, companies operate at insufficient capacity and the unemployment rate rises. The economy is still far from the point of full employment equilibrium.

A depression in an economy does not last forever unless it is caused by the wrong policy. The phase in which economic activity begins to increase again is known as the expansion or upswing phase. The increase in activity refers to the increase in production, consumption, investment and employment, in other words, the beginning of an improvement in the macroeconomic indicators of the economy. As new investments increase overall demand, they generate a multiplier effect on income and demand. In particular, when economic development accelerates, interest rates fall, when interest rates fall, investment spending increases, and with the multiplier effect, the rate of recovery of the economy from recession increases.

As shown in the chart above, the trough and peak are the last points at which a country's economy is in both expansion and contraction. When an economy is at these points, it is the responsibility of economic management to restore balance in the economy through expansionary and contractionary monetary and fiscal policies.

While fluctuations in business cycles were taken into account, especially with regard to the economic crisis of 1929, this has been viewed from the perspective of a lack of aggregate demand. The key to overcoming the recession in a country influenced by Keynes' ideas was seen as increasing aggregate demand. Until the 1973 oil crisis made it clear that the supply side of the economy could also trigger the crisis. While the countries that imported the raw materials needed for production were at a considerable cost disadvantage due to the oil crisis,

developing countries dependent on imports were also confronted with a new crisis. (Özçelik and Babayigit, 2018)

2.1.2 Types Of Economic Crises

It is a well-known fact that the phenomenon of crisis has painful consequences for every country. So in what areas or types of crises do they occur? There are many types of crises, and they can be divided into two: Financial crises and real sector crises. This is where the impact of financial crises becomes even more devastating. This is because financial crises are caused by one or more banking, currency and debt crises. Let us now take a look at financial crises. (Aksoy, 2010)

Financial crises often occur in the financial markets. Bank failures can be triggered by factors such as sudden drops in the stock and commodity markets and collapses in the credit market. The global financial crisis of 2008, for example, began with the collapse of the real estate market in the US and spread around the world. There are two factors that trigger financial crises. These are banking and currency crises. There were hardly any banking and currency crises before 1980. In the course of financial hardening, banking and currency crises tended to increase after that year. It is assumed that these two crises trigger each other. (Fetai, 2013)

However, the biggest problem of this liberalization is speculative movements. Short-term capital investments are directed to countries that offer investors high interest rates or low tax benefits. In general, these countries need short-term investments because they do not have sufficient national savings and have large current account deficits. These short-term investments are referred to as “hot money”. The main disadvantage of this seemingly beautiful concept is that it leads to speculative movements. (Edison and Reinhart 2001)

This situation can be explained as follows. Money coming into the country as a short-term investment inflow causes the country's currency to be overvalued. This situation encourages consumption and imports. As this inflowing money is not transferred to areas with high marginal productivity, imports occur. As a result, imports exceed exports, creating a deficit in the balance of payments. However, if this money is issued for speculative motives, it leads to an unexpected increase in the country's exchange rate, i.e. a devaluation of the country's currency. In the face of such an increase, interest rates are raised to prevent a further deterioration of the financial balance. Investments decline and a country's debt burden increases. As a result of this situation, the sustainable macroeconomic balance is disturbed and a crisis may occur. (Aksoy, 2010)

There are two main pillars that cause the financial crisis. These are banking and currency crises. As a result of these two main crises, the country gets into debt and faces a third crisis, the debt crisis. Let us now explain these crises.

Firstly, banking activities are an important mechanism for providing financial resources for economic stability. Economic stability is the balance between the financial markets and the real sector. The efficient and active functioning of the banking sector paves the way for the development of financial markets. Therefore, a crisis in the banking sector, i.e. a bankruptcy, can lead to the outbreak of a financial crisis. If the banking sector is drawn into a crisis, this

entails a series of additional measures. The bankrupt bank(s) are either closed or merged, or they are rescued with public aid or transferred to the general public. (Kaminsky and Reinhart 1999)

With the increasing liberalization of the financial sector, buyers and suppliers of capital can easily find each other on the market. In other words, capital mobility is gaining momentum. Loans, especially those provided by those offering funds at low interest rates, make it easier for those seeking funds to access the capital they need. The ease and accessibility of the financing channel reveals two important situations in the financial markets. These are "adverse selection" and "moral hazard". This situation indicates disruptions in the financial markets. Adverse selection occurs when loans granted by banks are granted to persons or institutions about which complete information is not available. In this situation, there is a risk of non-repayment of loans. The moral hazard is that individuals/institutions to whom the intermediary institutions have granted credit do not abide by these loan terms. (Mishkin, 2001)

Secondly, when a national currency depreciates against foreign currencies, individuals often turn to foreign currencies to protect their purchasing power. In a fixed exchange rate system, the central bank must sell foreign currency from its reserves to meet demand and maintain the balance between currency supply and demand when pressure on the exchange rate increases. Such developments lead market participants to expect the currency to depreciate, resulting in speculative activity and increased currency purchases. As the central bank struggles to meet the rising demand for foreign currency, a foreign exchange crisis or a balance of payments crisis can occur. It is important to make an important distinction here: In countries with a fixed exchange rate regime, this type of crisis is called a "balance of payments crisis", while in countries with a "flexible exchange rate regime" it is called a "foreign exchange crisis" (Doğanlar, Harun, and Ozmen, 2007)

According to Kaminsky and Reinhart, banking crises and currency crises are twin crises that exacerbate each other.

The third and final type of financial crisis we will discuss is the external debt crisis. Some industrialized or developing countries want to use their savings to invest in certain sectors. Increasing investment is a necessary tool to achieve the country's growth targets. Nevertheless, insufficient savings rates represent an obstacle to the country's development. In this regard, countries are willing to take on foreign debt. Then the public and private sectors, the two locomotives of the country's economy, can borrow. If these two groups are unable to pay their debts, a debt crisis may occur. In particular, the inability of the public sector to pay its foreign debts is significant for the public sector. If the state is unable to defer its foreign obligations or restructure its debt, a debt crisis occurs. The best known of these debt crises is the "Mexican debt crisis" of 1982, later joined by Latin American countries such as Argentina, Chile and Brazil. (Sachs, 1989)

Let us now look at the economic groups most affected by the financial turmoil. This segment is the private sector. The so-called real sector is responsible for the production of goods and services and the maintenance of balance in the labor market. The devastation caused by a crisis in the real estate sector is comparable to that of financial crises. Unemployment, recession and inflation are caused by the real crisis sector. Inflation is triggered by a fall in demand in the markets for goods and services and an insufficient supply in response. In

addition, a lack of new investment in the production sector or deteriorating economic conditions that do not stimulate demand cause the economy to stagnate. This can disturb the equilibrium of full employment and increase unemployment. (Turhan, 2001)

In fact, crises in the real sector and financial crises trigger each other. As already mentioned, the interaction between the providers of money in the financial markets and the demanders of money in the real sector is very pronounced. A deterioration in the financial sector leads directly to the fact that the funds required for investments in the real sector are not received. If fundraising becomes ineffective, this can plunge the real sector into a crisis. This situation can be expressed as follows. A crisis in the financial sector leads to banks going bankrupt, increasing the cost of credit and thus reducing the volume of loans that can be granted. This situation leads to the postponement of borrowing for private sector investments. The result is that investment is postponed and production declines. (Bernanke, Gertler and Gilchrist 1999)

2.1.3 Economic Approaches Developed Regarding The Formation Of Economic Crises

2.1.3.1 Classical Economic Theory

The first discussion of business cycle theories began in 1862, and the first step in this regard was Clément Juglar. According to Juglar, the understanding of fluctuations in an economy can be explained by the economic activities in the current period. He suggested that the crisis that occurs only in a certain part of the economy is not considered as cyclical waves, but the business cycle fluctuations are a shock that affects the entire economy. In other words, he stated that the economy had deviated from the general equilibrium level and that the return to equilibrium would occur with an increase in employment, output and income. (Besomi, 2005)

The thinkers of the neoclassical school, including W.S. Jevons, C. Menger and L. Walras, the founder of the general equilibrium theory, considered economic crises to be random. According to this school, economic equilibrium occurs automatically. It is therefore theoretically impossible to speak of a crisis in the face of an automatically achieved equilibrium. If there were crises, they would be due to external shocks. The existence of external shocks causes distortions in the labor market through government intervention in the free market, union pressure and wage policy. (Hadziahmetovic, Halebic and Prguda 2018)

D. Ricardo explained the crisis of 1816, which is considered the first crisis in the modern sense, as a random movement. He described this crisis, as J.B. Say said, as a random phenomenon with the statement "Every supply creates its own demand", also known as "Say's Law". In other words, a produced good is consumed in any case and no stock is created in the economy. Therefore, the goods produced are equal to the revenue generated on the day of purchase. (Yılmaz, Kızıltan and Kaya, 2005)

The most significant view of the classical school of economics is that with the concept of the "invisible hand", economic equilibrium will always exist. According to this view, an economy that is out of balance will be brought back into balance and full employment will

be achieved without the need for government intervention. On this basis, it has been said that in an economy where there is no market freedom and no government intervention, fluctuations in the business cycle will have no effect on economic activity. On the other hand, although the classical school accepted that technological developments and wars lead to shocks in the economy, it stated that these shocks come from outside and have nothing to do with the functioning of the market. (Ozçelik and Sunay, 2018)

The remark of the classics, which had been accepted for a long time, was challenged by a major event. This event is the economic crisis that broke out in America in 1929 and is called the "Great Depression". Before this time, economic crises were seen as a monetary phenomenon. This was because the FED had only just been founded and the prevailing opinion was that the monetary policy it pursued caused economic fluctuations. The consensus at the time was that the overvalued British currency, the pound sterling, would lead the economy into recession and that the monetary policy implemented would inevitably trigger a crisis. (Schwartz, 1994). However, the opposite of this view was put forward with the economic crisis of 1929.

2.1.3.2 Keynes' General Theory

As is well known, Keynes discussed a wide range of economic topics in his book "General Theory", in which he made his ideas public. The fact that he concentrated on the idea of depression rather than economic cycle waves was one of his most important concepts in the work cited above. He made it clear that money and demand are the two primary driving forces behind the idea of a slump. Unlike the classics who predicted that the economy would find equilibrium at full employment, Keynes argued that the economy could instead reach equilibrium at underemployment due to the fixed wages and prices in the economy. This explanation suggests that economies will not be able to avoid crises. (Pigou, 1936)

Keynes emphasizes that the first and most fundamental reason for the crisis is that the negative atmosphere in the capital markets directs investors' decisions towards a decline in the expected return on capital. This expectation will quickly reduce the marginal productivity of capital and the crisis begins. The second reason for the crisis is that the expected negative impact on the market will disrupt the other macroeconomic balance of the economy and cause a deterioration in income distribution. It will further disrupt the already non-existent equity between the poor and the rich, which will reduce effective demand. (Ozçelik and Sunay, 2018)

Keynes explained another reason for the crisis with the "liquidity preference theory". Economic agents want to hold money for three reasons. The first is the transaction motive, the second is the precautionary motive and the third is the speculative motive. According to this theory, an increase in the money supply cannot lower interest rates any further. At this point, interest rates are as low as possible. Therefore, people have a pessimistic view of the future of the economy. Therefore, interest rates that are lowered or reach their maximum will prevent investments that will not eliminate the credit backlog caused by the uncertain environment in the economy. (Bocutoğlu and Ekinçi, 2009)

To summarize, Keynes stated that a country will inevitably experience an economic depression due to both views.

According to Keynes, he argued that economic agents operating in the market, i.e. consumers and investors, act based on future expectations, take positions in investment and consumption decisions and therefore act irrationally. He stated that due to the multiplier effect in particular, the increase in investment spending will impress total spending in the economy, GDP, disposable income and consumer spending and as a result nominal wages will remain unchanged and economic growth will be achieved. (Tobin, 1995)

On the other hand, Keynes criticized the balanced budget approach of the classical school and emphasized the compensatory budget approach. According to Keynes and his followers, in the event of an economic crisis, compensatory fiscal policy is pursued instead of balanced budget policy, and deficit financing policy in the market is the most important key to get out of the deflationary situation in the economy. In other words, in rebalancing an economy that has moved away from full employment equilibrium due to recession, balanced budget policy will not be the most important policy. (Diciler and Ozkivrak, 2010)

But Keynes' views were insufficient to explain the decline in output that began in the 1970s and caused economies to contract. New research has begun to emerge from the new economic depression.

2.1.3.3 Monetarist Approach

The statement by Keynes quoted above states that the negative developments in the economy are always due to the deficiencies on the demand side of the economy and therefore external shocks in the economy arise as a result of the lack of demand. The Keynesian policies implemented in economies after the Second World War, especially the unregulated expansion of the money supply, led to inflation and governments failed to reduce inflationary pressures. With the inflationary process in the 1960s, Keynes' views began to be challenged and new ideas were sought that would reduce the impact of economic fluctuations. This was because the "stagflation" of the 1970s showed that unemployment and inflation could coexist.

Monetarists argue that external shocks are caused by deviations from the natural rate of interest. The natural rate is defined as the long-run level of real output and employment, suggesting that there is no inherent trade-off between unemployment and inflation. More specifically, economic agents with adaptive expectations may cause the real variables to deviate from the natural rate in the short run. However, since these agents learn from their short-term mistakes, they are not subject to monetary illusions in the long run, allowing the economy to return to its natural course. Consequently, the attempt to reduce unemployment through inflation will have no effect in the long run and unemployment will stabilize at the natural rate. Moreover, any short-term declines in real interest rates will return to their original levels in the long run. (Jahan and Papageorgiou, 2014).

Monetarists hold three basic views. First, the growth of the money supply is a determinant of nominal GDP. Second, wages and prices are relatively flexible. Third, contrary to Keynes'

view, the free market economy is stable, parallel to the classical school. Milton and Schwartz explained that the most important reason for the troughs and peaks of economic fluctuations are changes in the money supply. This is because central banks are the determinants of the money supply. The low interest rate policy pursued by central banks leads to a short-term increase in consumer and investment spending, so that the economy enters a recovery process with the increase in aggregate demand. However, as this situation is not sustainable in the long term, the money growth rate falls and the economy enters a recession. If this situation worsens, i.e. if the money growth rate becomes negative, the economy falls into a major depression, i.e. a depression. Of course, an excessive expansion of the money supply, i.e. an increase in the money supply above the growth rate, always leads to the phenomenon of inflation. (Friedman and Schwartz 1965)

2.1.3.4 Marxist Approach

One of the economists who first explained the concept of underproduction was Jean Charles Léonard de Sismondi. In his most significant works, known as the "Nouveaux principes d'économie politique" (New Principles of Political Economy), he proposed an economic system designed to increase prosperity and equality in society. In particular, he questioned the productivity and growth of capitalism and criticized the views advocated by classical economists such as Adam Smith and David Ricardo, such as full employment and continuous growth. As a result, it has been shown that crises can occur because the economy is not in equilibrium at full employment. (Schneider, 2001).

Sismondi's important theses are that capitalism has crisis tendencies and can lead to social problems such as unemployment and income inequality. Despite the progress in the production process, Sismondi criticizes that there is still high unemployment and poverty in the capitalist system. In his opinion, these problems arise from the fundamental dynamics of the capitalist system. These fundamental dynamic leads to cyclical fluctuations. Economic activity then experiences cyclical periods of growth and recession. Sismondi argues that these cycles are an inherent feature of the capitalist system and that unemployment and social suffering can increase during recessions. (Aydn and Araman, 2018)

Karl Marx, on the other hand, extended Sismondi's earlier beliefs and proposed a method based on economic and social theory known as Marxist crisis theory. Marxist crisis theory is an approach based on the economic and social philosophy of Karl Marx. Marx's crisis theory states that economic crises are inevitable in the capitalist system. These crises are the result of the conflicts and structural inadequacies inherent in capitalism. Since capitalism is based on the accumulation of capital, dead ends in the process of capital accumulation lead to fluctuations in output and consequently to crises. This situation illustrates the internal conflicts underlying capitalism. Foremost among these contradictions is the contradiction between private ownership of the means of production and labor in the production process. In Marx's words, the accumulation of capital leads to lower profitability because competition increases, labor costs rise and markets shrink. This can lead to economic crises. (Vorhies, 1989).

Indeed, his theory of crises states that the nature of crises is deeply rooted in the capitalist system and is too deep to be solved by the system itself. It is an essential point of Marxist

theory that crises are not seen as temporary problems that can be overcome by the system, but as structural problems arising from the internal dynamics of the system. It further emphasizes that economic crises are not only based on economic reasons, but are also influenced by social, political and ideological factors. This theory argues that the crises of capitalism are systemic problems that require radical solutions and claims that these problems can only be solved by replacing capitalism with another system, usually socialism. (Kliman, 2015)

2.1.3.5 Rational Expectations Theory

In the 1970s, the global economy has been confronted with "stagflation", a new phenomenon in which inflation and unemployment coexist. This is a situation in which unemployment and inflation occur simultaneously. In such a situation, the unemployment rate in an economy rises and prices also rise rapidly. Keynes believed that the effects of a crisis in the economy would be overcome by effective demand. However, the stagflation he experienced during this period shook these ideas to the core. Therefore, the New Classics, a new school of economics that, like Keynes, emphasized expectations, offered ideas on what policies should be applied in this situation. (McCallum, 1980)

The New Classical Theory, also called the theory of rational expectations, was proposed by J. Muth and later developed further by Robert Lucas and Thomas Sargent. In contrast to Keynes, they emphasized long-term economic policy. This is because the rational expectations of economic agents are at the forefront of long-term economic policy. An unexpected shock in the short term can influence the decisions of economic agents. A short-term positive price increase has an impact on current unemployment and production and also leads to an increase in investment. In the long run, however, this shock will not persist as economic agents act rationally. (Zarnowitz, 1984)

They explained that external shocks are accompanied by fluctuations in the volume of money. Accordingly, imbalances between the interest rate on money credit and the natural rate of interest lead to excessive credit accumulation in the economy, so that external shocks occur because excessive credit accumulation disturbs the balance of relative output and prices. However, as perfect competitive conditions prevail in the economy, it is not necessary for the state to intervene in the economy through monetary and fiscal policy measures. This is because the balance in the market indicates that the market has cleared. (Yılmaz, Kızıltan and Kaya, 2005)

In addition, it indicates that there are at least no major problems in the economy when there is a well-developed and deep market. However, there are cases where markets do not function properly. This situation, referred to as market failure, refers to the inability to utilize resources effectively and efficiently (Stiglitz, 1989). According to rational expectations theory, economic fluctuations are considered market failures. (Lucas, 1995)

The new classical theory examines political economy from two perspectives. The first is predicted economic policy and the other is unanticipated economic policy. In particular, policy makers are less able to predict the economic situation than market actors. In this respect, the implemented policies cannot achieve the objectives. For example, the

implementation of a new monetary policy by policy makers will fuel inflation because the velocity of money is misjudged. A wrongly implemented policy will therefore cause a recession in the economy. (Ozcelik and Sunay, 2018)

2.1.3.6 Supply-Side Policy

The "supply-side economics" approach developed by L. Bartley and A. Laffer refers to an approach in which supply, i.e. the provision of factors of production and products, is at the forefront of economic analysis. This approach focuses on factors that are determined by supply, such as prices, production volumes, competition and resource allocation. Supply-side economics assumes that market equilibrium is determined by supply. In this approach, the price of a good or service depends on supply factors such as production costs, the availability of resources used in production and technological progress. (Laffer, 1981).

This economic approach is a model that is particularly valid under competitive conditions. Supply-side economics supports the free determination of prices and allocation of resources in free market economies. This approach emphasizes the nature of the market and the efficient use of resources. While Keynes stated that a crisis in the economy can be overcome by overcoming the demand side, the economic crisis on the supply side can be overcome by supply side policies. (Aksoy, 2010)

The theoretical basis for this situation is the Laffer curve. This curve shows the relationship between tax rates and tax revenues. Laffer claims that tax rates that are too high can discourage people from paying taxes and restrict economic activity, which can lead to a decrease in tax revenues. Similarly, tax rates that are too low can lead to lower tax revenues as they may not be sufficient to pay for public services. (Blinder, 1981)

Ultimately, Laffer's views suggest that economic policy makers need to find an optimal point when setting tax policy. This optimal point is seen as the point at which tax rates should be set to both stimulate economic growth and generate sufficient tax revenue.

2.1.4. Models Of Economic Crises

2.1.4.1 Classic First-Generation Models

1970 was a year of significant upheaval in the global economy. The collapse of the Bretton Woods system and sudden, unexpected shocks to oil prices put national economies in dire straits at the time. The era of economic prosperity after the Second World War had overshadowed past economic crises and discussions about economic crises had been pushed into the background.

But as gold became more in demand in 1969, open market operations ended, leading to an increase in speculative movements. Salant and Henderson were aware of this volatility in the commodities market. Both authors ignored the negative consequences in the money

markets and instead focused on the speculative attacks in the commodity market. (Durmus, 2010)

Based on the potential imbalances in the commodity market, Stephen Salant developed his first generation crisis model. The model considered was sufficient to explain currency crises until the 1990s, but it was insufficient to describe other types of crises. He says that in a commodity market, speculators who expect the prices of the goods they own to rise relative to the prices of other goods are unwilling to sell the goods in question; if, on the other hand, they expect the prices of the goods to fall or remain unchanged relative to the prices of other goods, they are more willing to sell. He stated that they would be more willing to release their assets. (Salant and Henderson, 1978)

Paul Krugman, an economist at the US Federal Reserve, recognized that speculative movements in commodity markets can also occur in currency markets. In order to explain the reasons for this, he presented the first crisis models. This crisis model is referred to as the "1st generation crisis model" or "Canonical Currency Model" (Yılmaz, Kızıltan and Kaya, 2005)

The "first generation currency crisis model" by Paul Krugman is a theory that he presented in an article published in 1979. This model was developed to explain the causes of sudden and unexpected changes in exchange rates between countries. Krugman's model is based on some fundamental assumptions: (Krugman, 1977)

First, according to Krugman, the elasticity of countries' import and export prices, whereby import prices are generally more flexible than export prices, means that increases in import prices have a negative impact on countries' trade balances. This situation can contribute to exchange rate imbalances.

Second, Krugman argues that countries' foreign currency-denominated external debt can be vulnerable to exchange rate fluctuations. In particular, if a significant part of a country's external debt is short-term and the country's foreign exchange reserves are limited, sudden changes in exchange rates can put these countries in a difficult position.

Third and finally, he suggests that expectations of the withdrawal of speculative capital from certain countries can exacerbate exchange rate fluctuations. In particular, if many investors believe that a country's currency will depreciate, these beliefs can accelerate the decline in exchange rates.

According to Krugman, the combination of these factors can lead to first-generation currency crises. These crises typically occur when a country's exchange rate declines rapidly and the value of the national currency depreciates rapidly. Krugman's model provides an important framework for understanding the causes and mechanisms of currency crises. (Krugman, 1977)

2.1.4.2 The Second-Generation Models

Both Mexico and Latin America as a whole were affected by the Mexican crisis of 1994. This financial crisis is considered one of the biggest of the 20th century. The crisis began towards the end of 1994. The crisis began towards the end of 1994 and made Mexico's

already unstable economy even more unstable. The crisis began on December 20, 1994, when Mexico changed its exchange rate strategy. The Mexican government gave up fixing the exchange rate, which led to a sharp fall in the value of the peso. This led to a financial panic and bankruptcy throughout the country. The crisis also affected other Latin American countries. The crisis also affected foreign capital movements and global financial markets. (Whitt and Joseph, 1966)

The reasons for this crisis could not be explained by the "first generation crisis" models. This was the point at which Obstfeld looked at these crises from a different angle. He pointed out the connections between financial crises. He believes that the citizens of a country change their economic behavior when the fixed exchange rate system is removed from the economy. The attacks on the exchange rate start when the market expects a devaluation because the government's fixed exchange rate regime becomes more expensive to maintain. Even in the event that the country's macroeconomic balances do not deteriorate, the emergence of such a negative expectation at this stage indicates the onset of speculative movements (Obstfeld, 1996).

Tensions between the government and the market are often the result of differing opinions and interests on issues such as economic policy, regulation and governance. These conflicts can arise for a number of reasons and take many forms depending on the situation. One of the most common points of contention between the government and the market is the government's position on economic policy. The way the government sets economic policies such as interest rates, taxes and spending plans can have a positive or negative impact on market participants. Specifically, a negative market expectation could be the trigger for the start of the crisis. This is because the stability of money is no longer guaranteed in such a scenario. All considerations point to the possibility that low expectations precede a financial catastrophe. (Pesenti and Tille, 2000 - Fratzscher, 2003)

The origins of numerous crises in the 1980s and 1990s were explained by the first and second crisis models, even if the Asian crisis of 1997 remained unexplained. The "third generation crisis" is a new crisis theory that provides an explanation for the Asian crisis.

2.1.4.3 The Third- Generation Models

The financial crisis that affected Southeast Asian countries in the late 1990s is known as the Southeast Asian crisis of 1997. This crisis was triggered by a series of financial and economic problems in the region that led to severe economic disruption. The countries most affected were Thailand, Indonesia, Malaysia, the Philippines and South Korea, which experienced significant economic shocks compared to other Southeast Asian countries. Prior to the crisis, economies in Asia appeared to be robust and growth rates continued to rise. However, the exact causes of the crisis remain unclear as there were no obvious signs of its onset. (Yılmaz, Kızıltan, and Kaya, 2005)

The main cause of the outbreak of the crisis was the concept of financial liberalization. Reducing the centralization of financial markets and institutions within an economy is called financial liberalization. Typically, this approach means that governments relax or remove restrictions on the banking sector. The reduction or elimination of regulations on banks,

capital markets, insurance companies and other financial intermediaries can lead to financial liberalization. Therefore, risk appetite is increased by the high profit expectations of financial institutions, which are further fueled by government guarantees for loans to financial companies. As a result of this and the increase in loans, the loans taken out were invested in riskier sectors, which led to the creation of securities bubbles on the financial markets. Bad loans are created and the value of securities falls after this abrupt increase. The currency crisis was triggered by bad loans, which also brought the banking sector into such an imbalance. (Işık and Togay 2002)

A banking crisis can lead to the insolvency of a bank and a liquidity shortage when depositors, spurred on by fear in the financial markets, begin to withdraw their funds. This situation can also trigger a currency crisis, leading to a fall in the value of the national currency. Weaknesses in the financial system can undermine public confidence in the currency, which can lead to a sharp fall in foreign exchange reserves. Such a currency crisis can lead to a rapid and significant depreciation of the exchange rate, which in turn exacerbates the financial problems. The value of banks' foreign currency liabilities may increase under these conditions, and the depreciation of foreign currency deposits may further reduce their value. Consequently, banks may be forced to sell long-term assets at a loss to cover their obligations, leading to a further deterioration of their financial stability and possibly provoking a run on the bank. (Chang and Velasco, 1998)

As a result, regulators and legislators concerned with the economy must exercise extraordinary caution to prevent both types of crises and develop effective action plans in the event that banking and currency crises do occur. Preventive measures should include maintaining a robust regulatory framework that ensures the stability and resilience of the banking sector and implementing prudent fiscal and monetary policies to protect the currency. In addition, close monitoring of economic indicators and early warning systems can help to identify potential vulnerabilities before they develop into full-blown crises.

In the event of a crisis, quick and decisive action is crucial. This can include coordinated interventions by central banks and financial authorities, such as providing emergency liquidity assistance to banks, stabilizing the currency through foreign exchange interventions and implementing comprehensive financial restructuring programs. Through a proactive and integrated approach, regulators and legislators can mitigate the risks of currency and banking crises and ensure a more stable and resilient economic environment.

2.2 History of Crises

2.2.1 1873 - 1896 Economic Crisis: The First Known Crisis Of Modern Terms

When we talk about an economic crisis, the first thing that comes to mind is the Great Depression of 1929, especially in the economic sphere. Throughout history, economies have experienced many crises, large and small. However, capitalism has always experienced severe and deep crises, which has prompted economists to understand and study modern crises in even greater depth. However, the economic crisis of 1873-1896 remains in the dusty pages of history and is rarely discussed in academic studies. (Kaymak, 2010)

The economic crisis of 1873-1896 refers to a period historically known as the "Long Depression" or "Great Depression" This crisis refers to a prolonged economic downturn that particularly affected Western Europe and the United States. (Rosenberg, 1943)

It began with the Panic of 1873, a financial collapse triggered by excessive investment in railroads, which led to numerous bank failures and significant economic difficulties in various countries, particularly towards the end of the 1870s. During this period, production fell, unemployment rose and deflation set in. The agricultural sector contracted sharply and agricultural prices plummeted. (Musson, 1959)

The economic crisis led to prolonged economic stagnation and instability in Europe and the United States for many years. The main factors contributing to the crisis included excessive credit expansion, overinvestment and overcapacity. As the crisis reflected deep structural problems requiring long-term economic restructuring and regulation, a prolonged recovery period was required. Finally, this crisis, which lingered into the early 20th century in many countries, played an important role in shaping economic policy and financial regulations. (Musson, 1959)

2.2.2 1929: The Great Depression

The depression of 1929 is considered one of the worst economic collapses in history and is also known as the Great Depression. It was a severe economic crisis that began in the USA in 1929 and spread throughout the world. The depression began with a stock market crash in the United States and reached its peak on October 29, 1929, a day that became known as "Black Tuesday." Stock prices fell rapidly, banks went bankrupt and the unemployment rate rose. During this time, there were severe slumps in agriculture and industry, the volume of trade fell and deflation set in. The US economy gradually contracted from 1929 until the early months of 1933. (Temin, 1994)

This economic collapse in the United States led to economic difficulties in other countries and caused a worldwide economic recession. In the 1930s, there was great unemployment, poverty and social unrest worldwide. During this period, industrial production fell by more than 50% in Germany, England and France, which, along with the USA, were the most developed industrialized countries. In England in particular, which had the largest industry during this period, this rate was 83.5 percent. Furthermore, the effects of this crisis not only caused industrial production to shrink, but also created a huge number of unemployed people. (Romer, 2003)

On the one hand, the world has entered a deflationary process and the "wholesale price" index has fallen by more than 30% in the above-mentioned countries. As the crisis deepened, the world experienced devastating socio-cultural effects. According to sociologists, although the huge army of unemployed that has formed has given some families the opportunity to make plans for their future, the crisis has turned into physical and psychological unrest and strife, especially for the lower classes. (Temin, 2016)

The Great Depression brought about major changes in economic policies and financial regulations. During this time, states took a more active role and implemented various

programs to stimulate the economy. It also saw an increase in protectionist policies in international trade and stricter financial regulations. This period is considered an important turning point in economic history and played an important role in shaping modern economic regulations and policies.

Economic policies were enacted around the world during this time, although they varied from country to country and government to government. Nevertheless, some policies that were frequently adopted during the Great Depression could not be an antidote to overcome the crisis. This is because the liberal economic rules, which are directed against state interference in the economy, further exacerbated the crisis.

In this regard, the Great Depression era produced many different views that shaped economic thinking. It was at this time that J.M. Keynes' work "The General Theory of Employment, Interest and Money" was published in 1936. As someone who had experienced the economic crisis of 1929, Keynes began to look for the causes and ways out of the crisis.

He said that a lack of effective demand causes economies to deviate from the point of equilibrium. He also explained that this equilibrium point need not always be the "full employment equilibrium point". This idea of Keynes was a reference to the opposition to the most important phrase of the classical economic view: "Let them make, let them go". In this context, Keynes expressed that when the economy deviates from equilibrium, especially in times of crisis, the equilibrium level is reached by intervening in the economy through public spending, or in other words, by creating effective demand. (Clower and Howitt, 1998)

By stimulating aggregate demand through additional public spending, the future expectations of economic agents become positive, economic shocks are reduced or economic expectations become positive, and the economy comes out of recession and recovers. This situation was called "stimulus policy", which was characterized by Keynes' discourses and the economic practices of US President Roosevelt (1933-1945), who was elected after the "Great Depression". As a result of the aforementioned policies, the US economy slowly began to recover from the economic crisis. (Sen and Kaya 2015)

2.2.3 1973: Oil Crisis and A New Concept: Stagflation

It took a long time for the economy to recover from the devastation of the Great Depression. The effects of the crisis at that time were ended by the economic views of Keynes and the monetary and fiscal policies of the USA. The world then entered a new era of economic prosperity. Although there were no major crises during this period of prosperity, there were always minor crises.

Nevertheless, the global economy found itself in a new impasse in 1973. This dilemma is the concept of "stagflation", where high inflation and high unemployment coexist. First of all, elucidating this theoretical framework is an important contribution to understanding the period in question. Before this period, it was known that unemployment fell when inflation rose and vice versa when unemployment rose. The direction of this relationship is therefore always inverse. Furthermore, inflation refers to the continuous rise in the general price level and unemployment is defined as those who are able to work but are not working. There is a

close relationship between these two symbols that has preoccupied economists for years. (Archibald, 1969)

The relationship between unemployment and inflation was first theorized in Irving Fisher's work entitled "Statistical Relationship Between Unemployment and Price Changes" Later studies by Tinbergen, A.J. Brown and Paul Sultan also addressed this issue, but the relationship is most closely associated with the Phillips curve. The study by A.W. Phillips, "The Relationship Between the Unemployment Rate and the Rate of Change in Nominal Wages in England: 1861-1957", " was the first to prove that there is an inverse correlation between the inflation rate and the unemployment rate. In particular, Phillips investigated how nominal wages and unemployment are related and found that nominal wages tend to rise when unemployment falls and fall when unemployment rises (Phillips, 1958).

Despite these findings, this inverse relationship was found to remain conceptually rather abstract and underdeveloped.

As a result of the impact of this study, in 1960 Robert Solow and Paul Samuelson put the situation in question into a theoretical framework and transformed the original Phillips curve into a curve representing the relationship between inflation and unemployment. Later, Edmund Phelps and Friedman, two monetarist economists, presented a new perspective by adding "expectations" to the curve, which represents the relationship between two macroeconomic indicators. These economists concluded that inflation and unemployment do not influence each other in the long term and that there is only a relationship between them in the short term. They assumed that a long-term economic policy would not be effective and that unemployment would always remain constant at the natural rate of unemployment. (Friedman, 1997)

But then a new crisis erupted, originating in the US economy and wreaking havoc on the global economy. The 1973 crisis introduced a new concept into the world economic literature. This concept is "stagflation". In contrast to the above explanations, a new debate has emerged that there is no inverse relationship between inflation and unemployment and that inflation and unemployment can coexist. (Blinder and Rudd, 2008)

So let us look at the historical processes that led to the outbreak of this crisis. OPEC, an acronym for the Organization of the Petroleum Exporting Countries, was founded in 1960 with the participation of 13 countries. The aim of this organization was to improve cooperation between oil-exporting countries. (Şen and Kaya, 2015)

The organization's efforts to increase its revenues led to the outbreak of the crisis. In particular, oil companies' profits from oil trading have reached enormous figures and OPEC's revenues have not increased any further. This situation created unease within the association in question, so the organization left the oil companies out of the loop when it came to setting oil prices and made itself the sole authority in setting prices. These price increases amounted to 70% and this led to an increase in input costs, especially in the developed industrialized countries such as the USA, England, France, Germany and Japan, and the increased costs had a global impact as a new negative economic wave. (Solow, 1980)

As a result, it has been shown that both stagnation and inflation can occur in the economy.

2.2.4 2008: Global Financial Crisis

When it comes to 2007, everything seemed to be fine in the global economy. It was believed that excess liquidity in the US economy was driving up asset prices and, as a result, enrichment was increasing. However, this excess liquidity caused the US economy to overheat and the following question arose. The rise in overvalued asset prices was a foreshadowing of a new impasse in the economic world. Were these prices balloons or not? What were the reasons for this situation?

Banks and financial institutions made loans known as subprime mortgages to homebuyers with poor credit. These risky mortgages were bundled together and sold as complex financial products such as mortgage-backed securities (MBS) and traded on global markets (Sherlund, 2008). Rating agencies also gave these securities extremely optimistic ratings, leading investors to believe they were safe investments. The skyrocketing real estate prices led to an unsustainable bubble and encouraged speculation and excessive lending practices. (Gorton, 2010)

In 2006, housing prices began to fall and homeowners could no longer pay their mortgages, leading to a series of foreclosures and a collapse of the real estate market. Mortgage loans could no longer be repaid, leading to the bankruptcy of banks and financial institutions. Large financial institutions such as Lehman Brothers went bankrupt or received government assistance, leading to widespread panic in the financial markets. This panic caused disruption in all areas of finance. As part of this, banks stopped lending to each other, leading to a freeze in the credit markets and liquidity shortages. (Gorton, 2008)

With globalization, a new economic crisis was added to the economic crises that have spread over the last 20-30 years. The crisis spread worldwide and led to a severe recession in many countries, characterized by rising unemployment and falling GDP. Also known as the Global Financial Crisis or the Altprime Mortgage Crisis, it was a severe global economic crisis that began in late 2007 and continued into 2008 and beyond. (Şen and Çalışkan, 2009)

The United States intervened in this crisis with monetary policy instruments. The US economic policy makers, the FED, aimed to lower the high interest rates and expect a revival of economic activities. Monetary policy was the necessary policy to eliminate external shocks in the economy in the face of crises. The unbending defenders of this situation were the supporters of the "neoclassical" movement (Ferreiro, Gomez and Serrano, 2013).

However, this was not the case. Falling interest rates were not the key to overcoming the crisis. This situation confirmed Keynes' "liquidity trap" argument. As is well known, this concept of Keynes showed that the lowest level to which interest rates can fall. The economy in which interest rates fell to the lowest possible rate was in a liquidity trap. Based on Keynes' reasoning, fiscal policy therefore came to the fore as the most important instrument. (Auerbach, 2012)

2.2.5 A New Crisis: Covid 19 And Its Global Impacts

Crises around the world generally have to do with dead ends in the economic order. The oil crisis of 1973 and the global financial crisis of 2008 were usually caused by a wrong economic policies or the spread of an economic crisis originating from one country, especially the developed countries due to globalization. In 2019, the world had overcome the 2008 crisis and entered a recovery phase. But this seemed to be only a temporary circumstance. This time, China was at the center of the crisis and the interesting thing was that this crisis had nothing to do with China's economic and financial policies.

In 2019, a new type of crisis emerged, the so-called "Covid-19" crisis, which originated in the Chinese city of Wuhan and affected the whole world. Like other crises, this one was sudden and unexpected. Like any crisis, it had a profoundly destructive economic, financial and social impact on countries. Apart from the economic and financial imbalances that the pandemic has caused in countries, it has also increased poverty and income inequality worldwide. Low-income people and developing countries have been more affected by the crisis. (Fernandes, 2020)

The outbreak of the pandemic led to economic stagnation in many countries, while the implementation of the measures forced businesses to close and increased unemployment in many sectors. The restrictions imposed to control the outbreak had a negative impact on supply chains and trade. The restrictions made it difficult for businesses to continue their activities. In particular, companies in sectors such as travel, entertainment, tourism and retail came under severe pressure. (Baldwin & Tomiura 2020)

On the other hand, the outbreak also had a significant impact on global trade. The closure of production facilities and borders reduced global trade volumes and disrupted supply chains. The aforementioned crisis therefore had a devastating impact on the supply network. Because with the closure of the working population at home, the engines of the economy, such as industry, also failed. Most domestic and international flights were suspended to prevent the spread of the pandemic. (Kežžar, Velić and Damijan 2022)

The global spread of crises related to globalization facilitated the rapid spread of this particular crisis in almost all countries. The pandemic triggered great volatility in the financial markets, leading to significant price fluctuations in asset classes such as equities, bonds and commodities. In response, central banks and governments took various measures to strengthen economic stability. Governments made substantial funds available to mitigate the effects of the crisis and support economic activity. The European countries that were severely affected by the outbreak of the crisis focused primarily on increasing transfer payments. As a result, public debt and budget deficits increased in these countries. (Beck, 2020)

The massive impact of the pandemic on national economies upset macroeconomic balances. Economic growth rates declined, and even economies that achieved negative growth rates aimed for less negative growth rates. In addition, the US Federal Reserve cut interest rates to low levels and sought the starting point of the crisis in monetary policy instruments. However, the data on unemployment rates was confusing. For example, while

unemployment in Italy, Germany, France, Spain and Russia, which had been rising before the pandemic, was falling, it showed a downward trend after the pandemic. (Lacalle, 2020)

In summary, developed countries such as the United States, China, France, Germany and the United Kingdom, together with developing countries such as Russia, Türkiye and Argentina, have taken monetary and fiscal policies measures to mitigate the impact of the Covid-19 crisis. (Adrian 2020)

2.3 Crises experienced by Türkiye in the last century

After the military regime Türkiye on January 24, 1980, significant economic decisions were made. Türkiye's economic policies was drastically changed and reformed. After the coup, Türkiye economic reforms and laws. The main objectives of these changes were to ensure economic stability, reduce public spending, liberalize foreign trade and control inflation. The International Monetary Fund (IMF) and the newly elected government agreed to Türkiye's economic stability. Türkiye's economic policies was outlined in a way that was more in line with the IMF's guidelines. (Filizer, 2013)

Türkiye's exchange rate policy was changed in line with its new economic strategy. A more flexible exchange rate policy was introduced instead of the fixed exchange rate. This measure was taken to promote the opening of foreign exchange markets and the resurgence of international trade. In particular, a number of facilities and incentives were offered to attract foreign investment and trade to the country. Economic stability was promoted through fiscal restraint and limiting government spending. Reducing inflation and the budget deficit are the most important goals. After the coup, Türkiye began to implement a policies of privatization and economic liberalization. Reduced state interference in the economy and privatization were the intended means of strengthening the private sector. (Uçkaç, 2010)

These decisions drastically Türkiye economic structure of Türkiye and created the conditions for sustainable growth and improvement. Nevertheless, a number of the decisions made during this period were criticized for upsetting the social order. The aim of these policy changes and reforms was to make Türkiye economic system more competitive and innovative and to fully integrate it into the global economy. Unfortunately, there were particular obstacles and contradictions along the way, which led to the crisis of the Turkish economy in 1994. The financial crises of 2000 and 2001 followed this crisis. Each economic decision in turn triggered a sophisticated reaction that led to crises (Aksoy, 2010). Let us now examine the reasons for the crises that have occurred since 2000, as this is the most important finding of this paper.

2.3.1 November 2000 Banking, February 2001 Financial Crises and Transition Program to a Strong Economy

2.3.1.2 November 2000 Banking Crisis

Türkiye economy in 1980, numerous economic problems have arisen. The fact that international capital mobility has created new economic vulnerabilities is the most important of these problems. The measures taken on April 5, 1994 were intended to eliminate the negative economic atmosphere and guarantee that the economy would once again reach sustainable macroeconomic goals. These decisions had a temporary effect. Since 1994, the country's economy has remained weak, mainly due to public deficits that led to foreign debt. As a result, we are still far from the sustainable macroeconomic goals that policymakers had envisioned. (Emirkadı, 2005)

With the signing of the stand-by agreement with the IMF for Türkiye the crisis in 2000, the inflation targeting program of December 22, 1999 was launched. A clear indication of Türkiye's economic instability in the late 1990s and early 2000s was the country's high inflation rate. This program was a series of measures designed to reduce inflation and ensure Türkiye's economic stability. The main goal of the program was to reduce inflation to a single-digit rate by 2002. The study program focused on three main topics. The reorganization of monetary policy and the exchange rate was the first step, achieving a surplus in the primary budget was the second, and drastic changes in taxation, agriculture, social security and privatization was the third. (Karabıyık and Metin, 2010)

In particular, the Central Bank of the Republic of Türkiye played an important role in this stabilization measure. Within the scope of this program, it was the CBRT's task to monitor and evaluate the inflation control program. The Central Bank has committed to keep an eye on the adjustments of the program and to change the policy if necessary. As part of its efforts to reduce inflation, the central bank, which set the exchange rate policy, was responsible for maintaining the value of the currency. This was because maintaining constant exchange rates was one way of ensuring economic stability. (Eroglu, 2015)

This program was a decisive turning point in Türkiye fight against inflation in Türkiye. However, the initiative failed to achieve its goals for several reasons. The failure of the program was triggered by the lack of effective financial management. The inability to curb public spending and the ever-increasing budget deficits have made it difficult to reduce inflation. Fiscal austerity has been a challenge due to the country's indebtedness and persistently high interest rates. The slow pace of privatization and the lack of fundamental adjustments have limited economic growth. Ultimately, price volatility and cost increases persisted because state-owned economic enterprises (SOEs) were unproductive and wasteful with their resources, leaving their structural problems unaddressed. (Aksoy, 2010)

Türkiye the beginning of the program, Turkey faced a new crisis as global markets changed and the demand for foreign currencies increased in 2000. The crisis was exacerbated by the high volatility of exchange rates, which additionally led to huge open foreign exchange positions in the banking sector and significant deficits in the balance of payments. However, it is important to keep in mind the reforms and measures that helped develop Türkiye's

economic policies and anti-inflation measures during the implementation of the program. (Mangir, 2006)

It is fascinating to look at the contribution of the banking sector to the national economy before 2000. Until the financial crisis, Türkiye financial system was unpredictable due to problematic loan portfolios, insufficient capital and lax supervision. Interestingly, the unstable banks at the time were essential for addressing public deficits and played a key role in establishing the financial markets. High profits were made by lending to the government at high interest rates, which led to a considerable expansion of the banking sector. On the other hand, rising interest rates have driven the nation into an uncontrollable debt cycle and led to persistent inflation. The high interest rates in the economy have driven up the cost of supplying the private sector and at the same time made the national debt uncontrollable. This circumstance inhibited economic growth and contributed to the worsening and spread of the 2000 crisis. (Uygur, 2001)

Türkiye's economy suffered greatly from its high external debt, especially since the 2000 crisis. The problem worsened due to exchange rate changes and an increased need for financing from abroad. As a result, the ratio of short-term debt to total debt has increased, a clear sign of impending financial collapse. (Karaçor, 2006)

2.3.1.2 The Financial Crisis Of February 2001

In January 2001, the country panicked again as interest rates were cut and foreign loans were canceled, although the banking crisis that had begun in November 2000 continued. This wave led to an rise in capital outflows. With the outbreak of the crisis, both foreign and domestic capital owners began to sell their holdings and flee Türkiye to escape the risks and uncertainty. The crisis worsened and the Turkish lira fell as a result of this capital flight. The banking crisis of 2000 became a "currency crisis" due to the events of 2001. As a result, the country experienced a "double crisis", the effects of which were severe. (Karaçor, 2006)

On the other hand, Türkiye a period of political turmoil in the early 2000s. Economic policies were not consistent as governments changed frequently. Moreover, the "currency crisis" started as a result of the conflict between the president and the government of the time. This led to an attack on foreign exchange and failed to stop the speculative movements that dominated the market. The most important measure of the IMF-backed stabilization program was the abolition of the "foreign "exchange anchor" system on February 21, 2001, which fixed the value of the Turkish lira and allowed it to fluctuate. As a result, the demand for a liberalization of the exchange rate led to an uncontrollably high increase in the exchange rate. The central bank intervened in the highly unpredictable exchange rate by selling reserves. The "open position" in the banking sector has increased even further as a result of the rising exchange rate, causing the institutions to suffer from liquidity restrictions. Although the interest rate has been falling since 2000, this time it started to rise. (Aksoy, 2010)

It is more meaningful to summarize the basic development process of the crises as follows. In the 1990s, Türkiye's short-term external debt increased, making the weight of external

debt unmanageable and weakening the country's economy. The country is now more vulnerable to exchange rate fluctuations, especially in foreign currencies, due to the increased debt burden. Foreign exchange reserves fell as exports lagged behind imports, making the economy more vulnerable to shocks from external influences. Financial stability was jeopardized by the rise in loan defaults in the banking sector and the negligent management of banks that had led to the previous crisis. The consequences of these events significantly undermined banks' capital structures. Financial instability and an uncontrollably growing budget deficit are the consequences of the accumulation of public debt. This was exacerbated by insufficient tax revenues and an unrestrained increase in public spending. (Uygur, 2001)

When these elements came together in February 2001, Türkiye fell into a severe recession. The effects of the crisis included the collapse of the banking sector, unexpected exchange rate fluctuations, a sharp rise in inflation and a surge in unemployment. Türkiye reforms in Turkey and the IMF bailout package helped to mitigate the effects of the crisis, but the country's slow economic recovery had a severe impact on the lives of many of its citizens.

2.3.1.3 Transition Program to a Strong Economy

When a country's currency is fixed at a certain value or kept within a certain band, it is called an exchange rate anchor (within a band). In the 2000s, the country's economy went through several crises, with volatility in the foreign exchange markets usually being the main cause of these crises. In an effort to curb these fluctuations, policy makers have used the exchange rate anchor. To ensure a degree of exchange rate stability, reduce economic uncertainty and control inflation, a program of inflation targeting based on exchange rate anchors was introduced. However, this practice was short-lived as currency problems put an end to it. (Erçel, 1999)

In 2001, Türkiye a severe economic crisis. The economy was in crisis due to a number of factors, including excessive public debt, rising inflation, unpredictable exchange rates and unsustainable fiscal policies. To solve this problem and ensure economic stability, Kemal Derviş led the implementation of the "Transition to a Strong Economy" program. The goals of the program were to strengthen public finances, accelerate structural change, maintain fiscal restraint and control inflation. (Aksoy, 2010)

The following information is a list of the main components of the program.

First, uncontrolled public sector borrowing has jeopardized fiscal restraint. In this context, steps were taken to lower the budget deficit, increase revenues and regulate expenditures. On the other hand, initiatives have been taken to improve efficiency through public sector reforms. Structural measures were taken to ensure the sustainability of public finances. In addition, privatizations were accelerated and the general public received additional revenue. As a result, structural reforms were implemented to ensure market credibility, improve the investment climate and improve the competitiveness of the economic structure. (Kol (2012)

Secondly, the country was vulnerable to external shocks in the 2000s as a result of the actions of the banking system prior to that time, which were motivated by the pursuit of large profits.

The catastrophic impact on the banking sector has put a enormous strain on the treasury. As a result, the economy is now insecure, which is detrimental to the real economy as a whole. The ultimate goal of this program is to implement structural reforms in order to create a competitive and healthy banking sector structure. (Selvigül (2012)

Thirdly, the Turkish Central Bank Türkiye an extremely rigid monetary policy. The strategy of inflation targeting was implemented and the independence of monetary policy was strengthened. The formation of foreign exchange prices was facilitated by the transition to a floating exchange rate system. However, in order to regulate short-term fluctuations in the exchange rate, interventions were taken in the exchange rate. This served as the starting point for the goal of implementing a program that would not destabilize the equilibrium of the foreign exchange market in the long term. (Taşar, 2010)

The main objectives of the program were to increase savings in the public and private sectors, control inflation and promote sustainable economic growth in order to reduce debt.

2.3.2 The Impression Of The 2008 Global Crisis On Türkiye

The Turkish economy experienced two successive financial crises at the beginning of the new century. These crises had disastrous effects, including slower economic development, higher unemployment, a negative balance of payments and a severe downturn in the real sector. Confidence in the economy was restored with the help of the transition program to a healthy economy and political stability. The economy developed into a balanced process involving monetary and fiscal policy. In particular, public debt — both foreign and domestic — stabilized and the public budget was kept under control over a longer period of time thanks to strict fiscal policy. Inflation, which was around 20 percent in 2003, fell to a single-digit figure in 2004 and economic growth accelerated. (Kibritçioğlu, 2011)

The global economic crisis of 2008, which began in the United States, had a huge impact on economies around the world, both in developed and developing countries. Borrowing countries faced the risk of the credit channel closing and the availability of global capital decreasing. But as a result of their mutual trade cooperation, the US and the EU helped to the global crisis spreading faster, reducing demand for foreign trade and leading to significant real income losses for both economies. Finally, investors' and consumers' expectations of the economy have turned negative due to the uncertain and unsettled environment in which the economies find themselves. (Erdal, 2011)

It was impossible for these global economic trends to remain without affecting the Turkish economy. In particular, the decline in exports from EU countries, the shocks in the financial sector and the close interdependence with the economies of EU countries put the country's economy in a difficult situation. Turkey's foreign debt and investments were affected by the global financial crisis. Investors became less willing to take risks as the cost of borrowing abroad increased. Nonetheless, the country's deep and underdeveloped derivatives markets have mitigated the impact of the extremely damaging global crisis on the country. The financial sector is now less vulnerable due to this conclusion. (Kibritçioğlu, 2011)

Türkiye of Turkey's economic development has slowed. Reduced exports, shrinking domestic demand and investment restrictions also contributed to lower economic growth rates. Unemployment figures rose as a result of the economic slump and lower demand. The rise in unemployment led to social and economic problems. Industrial production was already declining before the crisis, but continued to fall as a result of the global crisis and returned rapidly in the aftermath. (Ertugrul, Evren and Çolak 2010)

2.3.3 The effects of the pandemic crisis on Türkiye

The COVID-19 pandemic, which has led to a global health, social and economic crisis, has caused irreparable damage in many countries. The COVID-19 pandemic, which began in China towards the end of 2019, spread rapidly around the world. The pandemic has not only overwhelmed the healthcare systems of many countries, infected millions of people and claimed numerous lives, but has also had catastrophic consequences for the economy. In many countries, many people have lost their jobs or their income because governments have enforced quarantine and restriction laws and companies have shut down or reduced their operations.

A 2020 report published by the OECD predicted that the global economy will shrink by 6% in 2020 and the unemployment rate in the OECD area will rise from 5.4% in 2019 to 9.2% in 2020. The report also noted that the impact of the crisis will be severe and persistent regardless of whether there is a second wave of the epidemic. (OECD, 2020)

It is clear that the pandemic is having a profound and complicated impact on people around the world and that it could eventually reach a breaking point that will have long-term social, economic and political repercussions.

The crisis not only has a lasting and profound impact on economies worldwide, but also directly on Türkiye. Since March 2020, Türkiye has imposed curfews and movement restrictions. As the circumstances of the epidemic worsened and became a global pandemic, the country's economy has suffered. The erratic fluctuations in oil, commodity, exchange rate and intermediate product prices led to disruptions in supply and demand, which in turn caused inflation to rise significantly. In particular, Turkish industry's dependence on intermediate goods has pushed the economy into a corner. Many different sectors, including tourism, retail and services, saw unemployment rise and incomes fall. (Küçükoğlu, 2021)

During the pandemic, tax revenues decreased and government expenditures increased. Due to this circumstance, borrowing became more and more necessary and public finance deficits increased rapidly. Attempts were made to mitigate the negative effects of the crisis, which were particularly acute for certain income groups, through transfer spending. However, international trade volumes shrank as a result of this crisis, which had a huge impact on the global supply chain. As a result, Türkiye's export revenues collapsed. (Adıgüzel, 2020)

The Central Bank has taken a number of measures to ensure the continuous and safe functioning of financial markets, credit channels and corporate cash flows and to mitigate the negative impact of developments related to the coronavirus outbreak on the Turkish

economy. Lowering policy interest rates was the most important of these steps. (Arabacı and Yücel, 2020)

With the aim of maintain fiscal discipline and getting inflation under control, Türkiye finally implemented a series of reforms after the economic crisis in the early 2000s. Various policy measures were taken and efforts were made to put the country's economy on an appropriate course to achieve macroeconomic balance and sustainable economic development. The global economic downturn of 2008 and the global epidemic of 2019 have stalled these goals. In addition, external shocks have been triggered by a number of other factors, including foreign policy, domestic political dynamics and global factors, all of which have a greater impact on Türkiye's economy. Therefore, Türkiye revolution in Türkiye has attached great importance to the political and economic developments of the 2000s.



SECTION 3: LITERATURE STUDIES ON HARMONIZATION OF MONETARY AND FISCAL POLICIES

3. A Literature Review

The achievement of macroeconomic goals and the maintenance of economic stability depend to a large extent on the combined effectiveness of monetary and fiscal policy. Economists and policymakers frequently consider how these two policies interact. So while the combined effectiveness of monetary and fiscal policy has been researched, monetary and fiscal policy have also been studied separately. Fiscal policy aims at longer-term and structural improvements, while monetary policy is usually implemented more quickly and focuses on short-term effects. The combination of these strategies at different points in the economic cycle can support the maintenance of economic equilibrium.

The economic theories of Keynes, which have gained traction in the global economy since the Great Recession, and the concepts of monetarist economic policy, which gained traction especially in the mid-1970s, will help us assess the effectiveness of fiscal and monetary policy. Keynesian economic theory states that the market is unable to recover on its own and that government intervention in the economy is therefore necessary. This intervention usually takes the form of public spending, tax policy and money supply control. For Keynesians, fiscal policy is an essential tool for managing the economy in this situation. In times of economic downturn, governments frequently cut taxes and increase spending. Monetarists believe that monetary policy has a stronger influence on the economy than fiscal policy. They argue that the money supply is the most important factor determining economic growth and inflation. They also believe that monetary policy is the backbone of the economy and that central banks must carefully control the money supply. Consequently, according to these economists, monetary policy measures will be more successful in limiting inflation and ensuring stability in the long run. (Blinder and Solow, 1973)

Two crucial elements of macroeconomic policy that have a major impact on economic activity are monetary and fiscal policy. These policy elements influence more than just economic expansion. Macroeconomic indices such as interest rates, consumption, investment, inflation and unemployment are also influenced. For this reason, numerous academic studies have investigated how this problem affects many countries. Therefore, this paper systematically examines the effects of monetary and fiscal policies on macroeconomic variables within the framework of domestic academic research in Türkiye as well as international academic studies.

Türkiye monetary policy affects economic growth, unemployment, inflation, etc., there are also studies examining the effects of fiscal policy on macroeconomic variables such as economic growth, manufacturing sector, etc. both in Turkey and worldwide. So there are many studies that examine the effects on the variables in detail. ((Berument and Dincer, (2008), (Bernanke at all, (2005), (Cochrane, (1998), (Bouakez at all, (2014), (Parker, (2011), (Perotti, (2005), Hur, (2007), (Umutlu at all, (2011), (Çetin at all, 2007) etc.). Although there is a vast literature on monetary and fiscal policy coordination, studies have been conducted to examine the effects of inflation targeting and fiscal discipline or budget balance on each other. (Çoban and Yeşil, 2022)

3.1. Studies Academics In Türkiye

Kaya and Şen (2015b) conducted an empirical analysis to examine the relative effectiveness of monetary and fiscal policies on economic growth in Türkiye between 2001 and 2014. In the study, the structural vector autoregression (SVAR) model was used on quarterly data to evaluate the comparative effects of these policies on growth. The variables included in the study were GDP growth rate, central government debt, real interest rate, inflation, real effective exchange rate, trade openness and net reserves. The empirical results of the study show that both fiscal and monetary policy have a significant impact on growth. However, it was found that monetary policy is more effective in stimulating growth than fiscal policy. In particular, the interest rate, a monetary policy variable, was identified as the most influential factor for growth. The budget deficit, a fiscal policy variable, was the second most important factor after the interest rate. These results suggest that although the relative effectiveness of these policies in promoting growth varies, both policies significantly impact growth and should be implemented in a coordinated manner.

Özer and Karagöl (2018) published an article in which they analyzed the effects of fiscal and monetary policies on economic growth in Türkiye from 1998 to 2016 to determine which policy is more effective in supporting growth. The study used data on real GDP, government consumption policy and the expenditure ratio. Econometric time series techniques such as the ARDL bounds test, structural unit root tests and Granger causality tests were used to evaluate the effectiveness of these policies on growth. The results showed that the monetary policy variable had only a transitory effect on economic growth and did not show Granger causality. In contrast, the fiscal policy variable was found to affect economic growth in the long run. From this, it was concluded that fiscal policy was more effective than monetary policy during the period under study.

Altuntepe (2011) examined the effects of monetary and fiscal policy on employment in the manufacturing industry. The study used the econometric method of VAR analysis and monthly data from the period 2009-2019. In this study, employment in the manufacturing sector was represented by employment figures, monetary policy was represented by M1 money supply, M2 money supply and total time deposits, while fiscal policy was represented by total tax revenue and direct and indirect taxes. The econometric model used was the double logarithmic model. The analysis included the ADF unit root test, lag length determination, co-integration test, action-response analysis, variance decomposition and the inverse roots by unit circle test. The results of the study indicate that the effects of the variables representing monetary policy on employment in the manufacturing sector vary between the short and long run. It was also found that of the fiscal policy variables, only indirect taxes have an impact on employment in the manufacturing sector.

Karaca (2017) evaluated the effectiveness of fiscal and monetary policy in Türkiye from 2004 to 2017 using quarterly data and a VAR model. The VAR model analyzed variables such as the relative change in real GDP (economic growth, Y), the relative change in the CBRT monetary policy interest rate (M) as a measure of monetary policy and the relative change in real non-interest expenditure (G) as a measure of fiscal policy. The results show that monetary policy was more effective than fiscal policy during the study period. Granger causality tests, impulse response functions and variance decomposition were used in the

analysis to examine the relationships between these variables. Granger causality tests indicated bidirectional causality between Y and M and Y and G, suggesting that both types of policy influence and are influenced by economic growth. The impulse-response functions supported the finding that monetary policy has a greater influence than fiscal policy, and this conclusion was further supported by the variance decomposition analysis.

Düzgün (2010) investigated whether monetary policy or fiscal policy is more effective for the Turkish economy. The study used the econometric ARDL analysis approach and included the analysis of GDP, money supply (M2) and public expenditure variables. It was noted that the data used for the analysis was quarterly and covered the period 1987: Q1-2007: Q3. The results showed that fiscal policy, not monetary policy, had a positive impact on Turkey's GDP.

In a study by Ozbek and Uğur (2022), the relative effectiveness of monetary and fiscal policy in the Turkish economy was examined using quarterly data from 2004 to 2020. The empirical method applied was VAR analysis, and the ADF and PP unit root tests were used to determine whether the variables in the model have a unit root process. The dependent variable of the model is the relative change in real GDP, while the explanatory variables include the relative change in the monetary policy interest rate as an indicator of monetary policy and the relative change in real non-interest household expenditure as an indicator of fiscal policy. It was shown that all variables in the model contain unit root processes. The results of the impulse response functions and the variance decomposition show that monetary policy is more effective than fiscal policy. The study found that the monetarist perspective, which supports the effectiveness of monetary policy, is applicable to Türkiye for the period from the first quarter of 2004 to the third quarter of 2020. Although fiscal policy was less effective during this period, the overall effectiveness of monetary policy was also limited. Akıncı and Tuncer (2018) examined the effects of Türkiye's monetary and fiscal policies on economic growth between 2006 and 2016 using the ARDL econometric analysis method. GDP, broad money supply (M2) and public expenditures were analyzed as economic indicators in the said study. In terms of efficiency, the comparison of Türkiye's fiscal and monetary policies led to the conclusion that monetary policy is more successful within the econometric results.

3.2. International Academics Studies

In a study by Kremetzer (1992), the effects of monetary and fiscal policy implemented in the United States on economic growth were examined. In the study in question, the econometric analysis method VAR was used and the years 1950 and 1991 were selected as the analysis period. The analysis used the growth rate of the monetary base and the 90-day Treasury bill rate as monetary policy variables and the change in total government expenditures as a share of GNP and the government budget deficit as a share of GNP as fiscal policy variables. The study concluded that monetary policy is still stable and relatively more effective than fiscal policy, albeit less effective from year to year. On the other hand, it found that while the effect of fiscal policy on output was not statistically significant over the period, there was some evidence that increasing the budget deficit could increase output.

Hussain and Niazi (1992) used Granger and Sims causality tests to analyze the effects of monetary and fiscal policy on nominal GNP in Pakistan for the periods 1971–1972 and 1989–1990. Their econometric analysis revealed unidirectional causality from nominal GNP to monetary variables, including money supply and monetary base. Similarly, the tests showed a unidirectional causal relationship between nominal GNP and total government spending during the study periods. Although the results suggest that changes in monetary variables affect the nominal GNP of Pakistan, there is also evidence that fluctuations in nominal GNP affect total government expenditure and not vice versa. Consequently, the results of the study indicate that monetary policy had a greater impact on nominal GNP than fiscal policy in Pakistan during the periods under study.

With the establishment of Economic and Monetary Union (EMU) in the European Union, a new framework for monetary and fiscal policy has been introduced, which has sparked interest in the European approach to policy formulation, implementation and communication. In this context, a study by Aarle et al. (2003) examines the macroeconomic effects of monetary and fiscal policy in the Eurozone using the structural VAR (SVAR) method. This approach was used to analyze the short- and medium-term effects of supply and demand shocks and the resulting adjustments in monetary and fiscal policy. The SVAR analysis included macroeconomic variables such as real output, real government revenue, real government spending, short-term interest rates and prices. First, the effects of these variables were assessed at the aggregate EMU level, and then comparisons were made with the United States and Japan. The results showed significant differences in the reactions of EU countries to monetary and fiscal policy shocks. The study showed that coping with supply or demand shocks through coordinated financial stability measures or a single monetary policy does not significantly affect prices and output. Furthermore, the study suggests that changes in output, prices and fiscal balances within EMU could result from improvements in common monetary and fiscal policy instruments.

The study by Fedajev et al. (2003) aims to investigate the effects of monetary and fiscal policy on economic development and employment in the EU between 2007 and 2015 via the inflation channel. This study used Partial Least Squares Structural Equation Modeling (PLS-SEM). The study used nominal short-term interest rates, real short-term interest rates and money market rates as monetary policy variables, while individual income tax rates, corporate tax rates, total tax and social revenues as a percentage of GDP, total government expenditure as a percentage of GDP and government consumption expenditure as a percentage of GDP were used as fiscal policy instruments. The results suggest that monetary policy practices differ between EMU and non-EMU countries, leading to different measures and negative spillover effects of European Central Bank (ECB) policies on non-EMU countries. At the same time, the ability of fiscal policy to reduce inflation and increase economic growth and employment is limited. This means that the impact of fiscal policy on economic development, employment and inflation is minimal. The results of this study suggest that monetary and fiscal policy should be better coordinated at EU level in order to support the macroeconomic stability of the Union in times of crisis.

Gupta, Mishra and Sahay (2007) analyzed the production patterns of 195 foreign exchange crises experienced by developing countries between 1970 and 2000, focusing on their relationship with various macroeconomic factors. Their study found that over 60% of these crises had a contractionary impact on the economy, while the remaining 40% were expansionary. The study revealed significant differences in the correlations between explanatory variables and output growth in crisis years compared to non-crisis years. In particular, factors such as private capital inflows, capital controls, long-term government debt or the depletion of foreign exchange reserves show no correlation with slower growth in non-crisis years, in contrast to their effects in crisis years.

A study on the importance of monetary and fiscal policy shocks for effective economic management in the New Zealand economy was conducted by Dungey and Fry (2009). In this research, the structural vector autoregressive (SVAR) research method was used to analyze the impact of economic policies introduced between 1983:q2 and 2006:q4 on the national economy. The data sets were collected on a quarterly basis. They also concluded that financial shocks are more successful in increasing economic growth, while monetary shocks are less effective for the economy. Furthermore, they claimed that shocks to debt and the tax system — two instruments of fiscal policy — are more successful in influencing the economy than shocks to public spending.

Monamodi (2009) examined the effects of fiscal and monetary policies on economic growth in Southern African Customs Union (SACU) member countries from 1980 to 2017. The study used public expenditure and revenue as key fiscal policy variables, while real interest rates, inflation, official exchange rates and M2 money supply were the key monetary policy variables. Unit root tests revealed that all variables were stationary at the level with the exception of M2 money supply — which was stationary after the first difference—. Consequently, the Panel Autoregressive Distributed Lag (PARDL) estimation technique was used in the study. The results indicate that both fiscal and monetary policies significantly affect economic growth in SACU member countries in the long run. The study also showed that public expenditures is a more effective fiscal policy instrument compared to government revenue. The Granger causality results show that public expenditures, real interest rates, inflation and official exchange rates influence long-term economic growth. In addition, the study found that higher public expenditures in SACU member countries crowds out private investment in the long run.

Hutchison (2010) examined how monetary and fiscal policy affected output growth in developing and emerging economies during financial crises. Between 1982 and 2003, they studied 83 financial crises in 77 different countries. In this paper, the key variables used are liability dollarization per nominal GDP, the capital account openness index, trade openness, which is the sum of exports and imports as a percentage of GDP, a binary indicator of banking crises, the average of 3-year pre-crisis inflation, and the actual exchange rate index. They controlled for several factors that influence output losses during financial crises using a simple empirical model. They determined the marginal effects of policy on output losses by extending the baseline model to include both contractionary and expansionary policies. The results of the basic descriptive statistics show that there is no clear relationship between spending during financial crises and economic policy at the time. However, they also find that a tightening of fiscal and monetary policy during a crisis leads to significant output losses.

The study by Nidhiprabha (2010) examines Thailand's macroeconomic policy responses to the 2009 global financial crisis using monthly data from 2000 to 2009 for the VAR model, an econometric analysis method used in the study. The explanatory variables are lagged endogenous variables with a lag length of up to eight months, which is determined by the Akaike information criterion. The extended lag length ensures that the model does not exhibit serial correlation. The model comprises nine variables, which are divided into three main groups: Output, components of aggregate demand and policy instruments. GDP or the level of production is approximated by the manufacturing production index. Total demand expenditure is represented by indices for private consumption and investment, exports and government expenditure. In addition to public spending, the model also includes tax revenues, the policy rate and the real effective exchange rate. In addition, the business climate index is included in the VAR model to capture the impact of the changing business environment on private sector investment and consumption decisions. The empirical evidence presented in the article shows that fiscal policy is relatively less effective than monetary policy. However, tax cuts prove to be more effective than government spending in stimulating production. Finally, it is argued that maintaining low exchange rates has no impact on output growth.

In their paper, Rossi and Zubairy (2011) examine the effects of monetary and fiscal policy shocks on macroeconomic volatility in the US. Using a VAR framework, the study examines how these policy shocks influence economic fluctuations. The analysis includes data from the fourth quarter of 1954 through the fourth quarter of 2006, and key variables in their VAR model include government spending, the federal funds rate, and GDP. The study comes to two important conclusions: First, fiscal policy shocks play a larger role in explaining mid-cycle fluctuations in output, while monetary policy shocks are more important in explaining business cycle fluctuations.

Baldacci, Gupta and Gradanos (2012) conducted a study in which they examined the effects of fiscal policy measures in 140 cases of systemic banking crises in developed and emerging economies between 1980 and 2012. The results show that while fiscal expansions reduce the probability of early recovery from the shock by almost a year, in crises triggered by financial sector distress, both automatic stabilizers and discretionary countercyclical measures, as well as measures to address financial sector weaknesses, help to shorten the duration of crisis periods. In particular, they pointed out that fiscal expansions based on measures to support government spending are more effective in mitigating the effects of the crisis than increasing public investment or reducing income taxes.

The study by Fetai (2013) examines how well fiscal and monetary policy worked in emerging and developing countries during the financial crisis (in the period from 1980 to 2010) with regard to economic growth. She applied a cross-sectional regression with robust standard errors and the GMM estimator to analyze 83 events in 66 emerging and developing countries to identify different determinants of output losses during financial crises. The results of using GMM estimators and other OLS approaches with robust standard errors show that fiscal and monetary contractions occurred throughout the period. The result illustrates that fiscal policy is a more useful tool than monetary policy in managing financial crises in emerging and developing countries.

Dosi et al. (2015) used an agent-based model to investigate the effects of alternative combinations of fiscal and monetary policy under different income distribution regimes. In particular, they considered the evaluation of fiscal rules in economies experiencing banking crises and deep recessions. They attempted to explain this situation using a model consisting of heterogeneous capital and consumer goods firms, heterogeneous banks, workers/consumers, a central bank and a government. The simulation results suggest that the most appropriate policy mix to stabilize the economy is automatic stabilizers that reduce fluctuations in business cycles, which requires the implementation of unconstrained countercyclical fiscal policy and monetary policy that also targets employment in the economy. However, discipline-oriented fiscal rules such as the “Stability and Growth Pact or Fiscal Compact” in the Eurozone put pressure on the economy in the event of a recession, so austerity policies have generally been seen as self-defeating. It is also clear that the negative effects of strict fiscal rules are exacerbated by a conservative monetary policy that focuses solely on stabilizing inflation. Finally, the greater the income inequality, the more pronounced the impact of monetary and fiscal policy on the economy.

Using annual time series data from 1984 to 2014, the study by Saqib and Aggarwal (2017) examined the relative effects of monetary and fiscal policy on economic development in Pakistan. The variables used were money supply as a measure of monetary policy and fiscal balance as a measure of fiscal policy. The cointegration results show that both monetary and fiscal policy have a significant and positive effect on economic growth. Since monetary policy has a much larger coefficient than fiscal policy, it is concluded that monetary policy in Pakistan has a greater impact on economic growth than fiscal policy. Therefore, it is suggested that Pakistani policymakers should prioritize monetary policy over fiscal policy to boost economic growth. Moreover, fiscal policy can be more effective in promoting economic growth by tackling corruption, resource leakages and improper utilization of resources.

The study by Dao (2017) empirically assesses the impact of factors contributing to the recovery of national GDP growth in the G7, Asia7 and Latin America7 countries affected by the 2008 global crisis. The author used a multivariate regression analysis to identify the factors influencing the recovery from the global financial crisis. The variables used in the regression analysis are: Percentage of national GDP growth for the period 2010-2012, inflation (annual inflation rate using GDP deflator), total reserves including gold, current account balance, percentage of national GDP growth for the period 2005-2007, financial assets as a percentage of GDP, fiscal policy openness index, non-performing loans as a percentage of total loans, change in trade policy openness, export product concentration, export market concentration, crude oil production per capita (bbl/day), and net exchange rate terms. Based on data from 21 developed and emerging economies, the study finds that strong macroeconomic fundamentals, clearer fiscal policy, financial liberalization, fiscal depth, domestic performance and favorable global conditions have a linear impact on national GDP growth. Cross-country differences in national GDP growth are also linearly related to macroprudential and favorable global conditions. The results of this empirical study can enable governments in developing countries to develop resilience strategies that can serve as effective tools to cope with future global financial crises.

Benmelech and Ilan (2020) conducted a study to investigate the determinants of fiscal and monetary policy during the Covid-19 crisis. They examined the effects of fiscal and monetary policy measures implemented during the Covid-19 outbreak on the economies of 85 countries, including 35 developed economies and 50 developing and emerging economies, using panel data analysis. The result of the study is that high-income countries announced more fiscal policy measures to mitigate the effects of the Covid-19 epidemic than low-income countries. In addition, it has been shown that a country's credit rating is the most important variable determining its fiscal spending due to the Covid-19 epidemic.

Alzyadat (2022) uses a modified St. Louis approach to examine the relative effectiveness of monetary and fiscal policies in the economic growth process of Jordan during the period from 1970 to 2020 based on his equation. The Autoregressive Distributed Lag (ARDL) method was used for the study. The data used in the created model are real GDP, government spending in the form of current and capital expenditure, tax revenue, government revenue or deficit/surplus in the public budget as fiscal policy variables, and money supply, interest rates, bank loans or private demand deposits in addition to monetary policy variables. The results of the study show that government spending has a greater and faster impact on the stability of the Jordanian economy than the financial variables. It was also found that the Jordanian economy can flourish by increasing the money supply. It was said that the two policies should be considered complementary to each other in this regard and that Jordanian economic growth is supported much more efficiently by a monetary policy that is in line with the expansionary fiscal policy.

In times of crisis, it is advisable to coordinate a tight fiscal and monetary policy. To implement this policy, tax rates are increased, liquidity is reduced and public spending is cut. Nevertheless, contractionary measures such as managing liquidity and maintaining equilibrium in financial markets can help increase the inflow of foreign capital while assessing the financial crisis process, especially for developing countries. However, the measures taken by emerging economies during the crisis led to a decline in production and higher unemployment, which accelerated the stagnation of the real economy. In the fight against crises, the simultaneous implementation of all macroeconomic measures can be crucial in order to eliminate crises. In this scenario, the coherence of monetary and fiscal policies will prevent crises from occurring. (Ozyilmaz, 2016)

SECTION 4: ECONOMETRIC MODEL

4.1 Data and Methods

4.1.1 Data

The study examines the effects of macro variables and monetary and fiscal policies on economic growth in times of economic crisis in the Turkish economy and the impact of these effects on whether the crisis is overcome or not. In this regard, the study uses the data of the Turkish economy for the period 2000: Q1-2023: Q4 as quarterly data. A table has been prepared to show which institution or organization the data used in the study comes from and this table is shown below.

Table 1: Data Set

Data	Definiton	Unit	Data Source
Y(rgrowth)	Real Growth	Millions of TL	Turkish Statistical Institute
unmrate	Unemployment Rate	Percentage	Turkish Statistical Institute
inf	Inflation Rate	Percentage	Turkish Statistical Institute
nonints	Non-Interest Public Expenditures	Millions of TL	Republic of Türkiye Ministry of Treasury and Finance
borrowing	Public Borrowing	Millions of TL	Republic of Türkiye Ministry of Treasury and Finance
tax	Tax Revenue	Millions of TL	Republic of Türkiye Ministry of Treasury and Finance
cons.	Consumption	Millions of TL	The Central Bank Republic of Türkiye
invest	Gross Fixed Capital	Millions of TL	The Central Bank Republic of Türkiye
İnt	Nominal Interest Rate	Percentage	The Central Bank Republic of Türkiye

Note: Arranged by the author

The data was initially recorded in Turkish lira (TRY) and later adjusted for inflation in real terms. This adjustment was made using the consumer price index (CPI). The real values were calculated by dividing the nominal values by the CPI and multiplying by 100. In this paper, real GDP growth is determined as the dependent variable. This is because the most important basis for the development of a country is economic growth. In addition, tax revenues consist of indirect and direct taxes. Non-interest public spending has been included in the analysis in order to focus on direct government spending on goods and services, which has a more direct impact on economic activity. This approach provides a clearer understanding of the government's fiscal policy effectiveness and its role in stimulating economic activity.

4.1.2 Methods

Econometric models are statistical and mathematical models developed to measure and analyze economic relationships using economic theories and data. These models are used to examine relationships between economic variables, make predictions, and evaluate the effects of economic policies. Economic relations are examined using methods such as regression analysis, time series analysis, and panel data analysis. (Stock and Watson, 2011)

Time series is a sequential series of data points measured or observed at regular intervals over a specified time period. Time series are used to analyze the behavior and trends of data over time. Therefore, in studies where time series are utilized, determining whether the series is stationary or not plays a crucial role. A non-stationary time series, exhibiting an upward or downward trend, leads to a phenomenon known as "spurious regression," which can result in erroneous conclusions. Hence, to avoid this error in studies, the stationarity of series should be tested.

VAR (Vector Autoregression) models are used in econometrics to analyze time series data and make forecasts. These models examine how multiple time series interact together. VAR models are used to understand how the past values of each variable and the past values of other variables affect their own dynamics. The coefficients in a VAR model are typically estimated by Ordinary Least Squares (OLS) for each equation. The basic characteristics of VAR can be defined as follows (Stock and Watson, pg. 6446 – 649).

Simultaneity: VAR models allow multiple time series to be modeled simultaneously. This means that the past values of each variable can affect the future values of all other variables.

Endogenous Variables: In VAR models, all variables are considered endogenous. This implies that the value of each variable is dependent on the past values of other variables.

Lag Length: To improve the accuracy of the model, the number of past periods, known as the lag length, is determined. This lag length is typically chosen based on the dataset and the objective of the model.

Hence, the mathematical formulation of a unrestricted VAR(p) model can be represented as follows:

$$Y_t = A_0 + B_1 Y_{t-1} + B_2 Y_{t-2} + \dots + B_p Y_{t-p} + \varepsilon_t \quad (1.1)$$

where:

Y_t represents the values of all endogenous variables (in vector form) at time t .

A is a column vector of length $n \times 1$ containing constants.

P stands for the number of lags. Consequently, VAR(p) is regarded as a VAR model of order p .

B_1, B_2, \dots, B_p denote the coefficient matrices of the model parameters.

ε_t , represents the error terms (in vector form) and is generally assumed to be normally distributed.

In this study, vector (Y) comprises 8 external data sets. These datasets include non-interest public expenditure, public borrowing, tax revenue, consumption, unemployment rate, investment expenditures, nominal interest rate and inflation rate.

Our model in a clear and linear form is as follows.

$$Y_t = [nonint(PE), borrowing(PB), tax(T), nominal\ int(int), inflation(inf), unmrte(U), con(C), invest(I)] \quad (1.2)$$

In a more open and linear form, the model of the thesis is rearranged as follows.

$$Y_t = b_0 + b_1PE + b_2PB + b_3T + b_4int + b_5inf + b_6U + b_7C + b_8I + \varepsilon_t \quad (1.3)$$

(Saqib and Aggarwal, 2017; Agbonlahor, 2014; Dao, 2017; Ünsal, 2020; Gupta et al., (2007)

$$Y_t = b_0 + b_1LogPE + b_2LogPB + b_3LogT + b_4int + b_5inf + b_6U + b_7LogC + b_8LogI + \varepsilon_t \quad (1.4)$$

Assuming linearity between the variables, the above equation was reformulated into a semi-linear form. This approach allows for the analysis of the relationships between the dependent and independent variables while providing a degree of flexibility in modeling the effects of each independent variable. By incorporating semi-linear relationships, the model can capture both linear and non-linear effects, providing a more nuanced understanding of how different factors contribute to economic growth.

The inclusion of the natural logarithmic forms of variables such as Rgrowth, PE, PB, T, C and I in the model offers significant advantages when analyzing growth rates. Logarithmic transformations are often used in economic data analysis to smooth out differences in the magnitudes of variables and allow for more meaningful comparisons. In addition, the logarithmic transformation generally makes the variance of the variables more stable, which contributes to greater stability of the modeling process.

The advantage of constructing a logarithmic model is the more stable variance that can be observed in the data. This is particularly important for economic variables such as growth, public spending, investment, consumption, borrowing and taxes, as these variables often exhibit significant fluctuations. The logarithmic transformation mitigates these fluctuations and leads to a more even distribution of data within the model. This increases the accuracy of the analysis and helps to clarify the relationships between the variables. (Lütkepohl, 2004)

On the other hand, keeping variables such as nominal interest rates, inflation and unemployment in their original form allows these variables to be included in the model in their natural state. This approach preserves the original magnitudes of these variables so that they can be included in the model without losing their economic significance. For example, variables such as inflation, which represent certain period rates, do not necessarily need to be logarithmically transformed. Leaving such variables in their original form helps to maintain the informative value of the analysis and contributes to a more accurate interpretation of the results. (Lütkepohl, 2004)

In this study, certain macroeconomic variables were selected to observe the effects of monetary and fiscal policy on economic growth. The selected variables include real non-interest public spending, real public borrowing, tax revenues, nominal interest rates, inflation rate, unemployment rate, consumption and gross fixed capital formation. These variables are crucial for understanding the impact of government fiscal policy (public spending and taxes) and monetary policy (interest rates and inflation) on economic growth. Real non-interest

public spending and public borrowing are used to examine the role of direct government spending on economic growth, while tax revenues assess the effects of government revenue raising and redistribution policies. Nominal interest rates and inflation rates provide information on the impact of monetary policy on economic activity and growth. The unemployment rate is an important indicator for understanding labor market conditions and the social effects of economic growth. Finally, consumption and gross fixed capital formation are used as fundamental components of economic growth to assess the effects of household spending and investment on growth. Together, these variables provide a comprehensive framework for examining the overall impact of fiscal and monetary policy on economic growth. (Karagöz and Keskin, 2016; Şen and Kaya, 2015; Çetin, M. 2022; Ünsal, 2020; Senbet, 2011; Van Aarle et al., 2003 etc.)

4.3 Results and Discussion of The Found Result

4.3.1 Unit Root Tests

Before using a VAR model, it is essential to perform unit root tests to check the stationarity of the time series data. Unit root tests are used to assess whether a time series is stationary. A stationary time series has a constant mean, a constant variance and a constant autocovariance over time, while a non-stationary series may have changing trends, leading to potentially inaccurate results. Performing unit root tests helps to detect and remove non-stationarity, leading to more reliable analysis results.

The most commonly used unit root tests in the literature are the Augmented Dickey-Fuller (ADF) test and the Phillips-Perron (PP) test. Additionally,

Hypotheses:

H0: The series has a unit root (the series is non-stationary).

H1: The series has no a unit root (the series is stationary).

Table 2: Unit root test - Augmented Dickey Fuller (ADF) test

Variable	Level		First Difference	
	ADF statistic (with constant)	ADF statistic (with constant & trend)	ADF statistic (with constant)	ADF statistic (with constant & trend)
Y	-9.479***	-9.437***	-11.683***	-11.618***
PE	-1.796	-8.971***	-16.817***	-16.763***
PB	-7.644***	-7.596***	-18.067***	-17.984***
T	0.677	-0.647	-8.969***	-8.984***
U	-2.564	-2.566	-9.350***	-9.412***

INF	-1.873	-1.761	-5.825***	-6.019***
Īnt	-2.466	-1.582	-6.761***	-6.926***
I	-1.730	-5.940***	-15.838***	-15.751***
C	-0.605	-3.395*	-10.746***	-10.779***

Table 3: Unit root test - Phillips–Perron (PP) test

Variable	Level		First Difference	
	PP statistic (with constant)	PP statistic (with constant & trend)	PP statistic (with constant)	PP statistic (with constant & trend)
Y(rgrowth)	-9.479***	-9.437***	-27.712 ***	-27.454 ****
PE	-1.796	-8.971***	-30.281***	-31.221***
PB	-7.644***	-7.596***	-22.942***	-22.884***
T	0.677	-0.647	-8.940 ***	-8.958***
U	-2.564	-2.566	-9.422***	-9.527***
INF	-1.873	-1.761	-5.745***	-5.928***
Īnt	-2.466	-1.582	-6.720 ***	- 6.845 ***
I	-1.730	-5.940***	-20.077***	-19.962 ***
C	-0.605	-3.395*	-13.900 ***	-15.049

Note: Arranged by author

4.3.2. Cointegration Analysis

In economics and statistics, the stochastic common trend refers to the concept that several time series variables share a common long-term trend in the same direction. This indicates the existence of a common trend between the time series and emphasizes its stochastic (random) nature. In the context known as cointegration, regression analysis can reveal long-term relationships between time series variables. (Stok and Watson, p. 663)

Cointegration analysis is a statistical technique used to detect and quantify long-term equilibrium relationships between non-stationary time series variables. If two or more time series are individually non-stationary, but their linear combination is stationary, these series are considered cointegrated. This indicates that the variables maintain a stable long-term relationship despite short-term fluctuations.

Based on these explanations, one of the most important tests for cointegration analysis is the Johansen cointegration test, which is performed in the context of vector autoregression (VAR). This test processes multiple time series and provides comprehensive results by determining the number of cointegration vectors through “trace” and “maximum eigenvalue” tests. Thus, if the series move together in the long run, the existence of a

cointegration relationship is assumed. In other words, an analysis based on their levels does not lead to spurious regression problems.

Determining the appropriate lag length in VAR (vector autoregression) analysis is critical to the accuracy and predictive ability of the model. Various methods and criteria can be used to determine the optimal lag length. These include the Likelihood Ratio Test (LR), the Final Prediction Error (FPE), the Akaike Information Criterion (AIC), the Schwarz Information Criterion (SIC) and the Hannan-Quinn Criterion (HQIC). One of these criteria is normally used to select the length of the delay for the model. Furthermore, before performing the Johansen analysis, the number of lags considered in the model was determined based on these methods. The results presented in Table 4 show that the LR, FPE, AIC and HQIC criteria suggest a minimum of 4 lags.

Table 4: VAR Lag Order Selection Criteria

Lag	LL	LR	df	p	FPE	AIC	HQIC	SBIC
0	-7297.83				3.5e+56	164.266	164.401	164.601
1	-6802.36	990.94	144	0,000	1.4e+53	156.368	158.126	160.73*
2	-6517.03	570.66	144	0,000	6.6e+51	153.192	156.573	161.58
3	-6250.3	533.46	144	0,000	6.6e+50	150.434	155.438	162.849
4	-5935.57	629.47*	144	0,000	3.9e+49*	146.597*	153.224*	163.039

Note: *indicates lag order selected by criterion

The trace test (trace statistic) is used in time series analysis to test for cointegration relationships. If the series are cointegrated, they do not diverge over time. In this context, the table above shows that the trace test indicates 7 cointegration equations at the 0.05 level. In other words, the null hypothesis was rejected at the 0.05 level of significance. Accordingly, there are 7 cointegration vectors in the system. Another test that confirms this situation, the results of the eigenvalue test, also reject the null hypothesis “ $H_0: r=0$ ”, which states that there is no cointegration between the variables.

Table 5: Johansen Cointegration Test

Maximum rank	Parameters	LL	Eigenvalue	Trace statistic	Critical Value %5
0	110	-40.098.073	.	6.958.464	233.13
1	129	-39.195.095	0.85956	5.152.508	192.89
2	146	-38.396.471	0.82380	3.555.261	156.00
3	161	-37.894.636	0.66410	2.551.590	124.24
4	174	-37.464.228	0.60768	1.690.774	94.15
5	185	-37.129.561	0.51690	1.021.440	68.52
6	194	-36.899.669	0.39333	561.657	47.21
7	201	-36.757.562	0.26577	27.7443*	29.68
8	206	-36.636.613	0.23121	35.544	15.41
9	209	-36.618.841	0.03790	-0.0000	3,76
10	110	-36.618.841	-0.00000	-0.0000	-

4.3.3 VECM (Vector Error Correction Model)

The Johansen cointegration test identifies the long-run economic relationship between the variables, and the Vector Error Correction Model (VECM) is used to predict how short-run deviations will return to equilibrium. This model helps to understand how time series data move towards a common equilibrium. VECM analyzes both the short-run dynamics and the long-run equilibria of variables that have a cointegration relationship. VECM uses the long-run equilibrium relationship (cointegration) of variables. Cointegration means that two or more time series variables move together in the long run and that the relationship between them is stable (Canbazoğlu, 2010).

In addition, the Vector Error Correction Model (VECM) includes an error correction term that accounts for deviations from the long-run equilibrium of the variables. This term helps to quantify how quickly the variables readjust to their equilibrium state. Consequently, the VECM helps to understand both the short-term dynamics and the effects of short-term fluctuations and shocks on the variables. Applying this model to the analysis of macroeconomic variables such as inflation, interest rates, exchange rates and GDP therefore ensures accurate and insightful results.

In short, the VECM is a powerful tool for econometric analysis that is particularly suitable for analyzing time series data with long-run equilibrium relationships. It provides a comprehensive and meaningful understanding of the short- and long-term dynamics of variables by considering them together.

The table shows the estimation results of the Vector Error Correction Model (VECM). This model was developed to examine the dynamic interactions between several economic variables over time. Each column corresponds to the equation for an endogenous variable within the model, where the lagged values of all variables are included to assess their impact on each other. In particular, the model includes four lagged values for each variable so that both short-run and long-run effects can be examined. The lagged values are important to capture the lagged responses of the economic variables. For example, economic growth figures from previous periods could directly influence the current level of government debt or consumer spending. In contrast, effects from two or four previous periods provide insights into longer-term economic relationships, e.g. how long-term growth trends may influence the future development of government debt or inflation.

Some results from the table can be interpreted as follows. The effect of growth ($Y(-1)$) on government debt is a significant negative effect, which is about $-3.51e+08$. This means that government debt (PB) decreases when the growth rate of the previous year increases. This suggests that strong economic growth could reduce government debt, possibly due to higher tax revenues or a lower need for public spending. On the other hand, the impact of non-interest public expenditure ($PE(-1)$) on inflation (Inf) is given as “8.944498” This means that an increase in public expenditure (PE) in the previous year leads to higher inflation. This situation could mean that while public spending is boosting economic activity, it may not be managed carefully enough to mitigate inflationary pressures.

These examples clearly show how economic growth, consumer spending and public spending have complex and multi-layered effects on other key economic indicators. In

particular, they illustrate the crucial role of lagged variables in shaping the current state of the economy. The lagged variables show how economic decisions and policy measures have an impact over time. They illustrate how economic growth influences macroeconomic variables such as debt levels, inflation and unemployment through consumption and public spending.

Table 6: VECM of Results

Independent Variable	Y	C	PB	PE	U	Inf.	T	I	int
Y (-1)	-.4220961**	1.10e+07	-3.51e+08 **	0.099	-7.22	17.08826	2.87e+11**	.4973346	-96.02***
Y (-2)	.8394582***	-3670443	-1.85e+08	.2032858	.117	-14.00807**	3.46e+11**	-.004	-55.84
C (-1)	-1.55e-09**	-0.978***	.7987015	-1.39e-09	1.50e-08	1.47e-08	-2222.117***	-9.81e-11	2.37e-07***
C (-2)	-2.72e-09**	-0.990***	.5890703	1.21e-09	-1.06e-08	-496111.7	2096.037***	1.34e-09	2.18e-07***
PB (-2)	3.89e-10	-.0559	-1.217907***	4.05e-10	-2.14e-09	0.025**	680.337***	1.47e-10	7.03e-08***
PB (-4)	9.31e-10***	.0635	-.0252	-4.15e-10	5.52e-09	.08876	270.2926	-1.71e-10	-2.01e-08
PE (-1)	-.1685916**	-9225588	2.71e+07	1.122156***	-.3540328	8.944498**	-4.20e+10	.007	-7.449298**
PE (-2)	-.1554322*	2910057	5.19e+07	.8127072***	.335499	-3.99e+08	-6.30e+10	-.125	-.310
U (-2)	.0103781	889938.3	3971755	-.01683	-.5615765***	.2008868	2.72e+09	-.007	.577
U (-4)	0.0192**	2291811	8083183**	.0179253	-.1524646	.4818643	-6.26e+09	-.0267263**	.288
T(-1)	-4.19e-13	-.0000328	-.0005668**	5.73e-13	-1.14e-11**	-7.501438*	-.031	3.62e-16	-1.87e-10***
T(-2)	1.25e-13	-.000023	-.0008366***	-1.26e-12	-8.87e-12	2.716876	.048	-6.30e-14	-1.68e-10***
Inf(-1)	0.258	0.999	0.019**	0.392	0.075*	0.000***	-1.68e+09*	331718.8**	-1.761214*
int (-2)	-0.001	-12351.46	919053.7	.0018236	.012	.0924107	-8.61e+08	-.004**	.2966424***
int (-4)	-0.002 *	-383808.8	72055.77	-.0016643	-.0203544	.3185721	-4.39e+08	-.004***	-.0173
R-sq	0.9551	0.9229	0.8390	0.9526	0.7690	0.9196	0.8707	0.9697	0.911
chi2	179,19	657,94	286,677	1019,114	181,217	235,548	370,2404	802,9757	557,262
P>chi2	0.0000	0.0000	0.0000	0.0000	0.0000	0.000	0.0000	0.0000	0.0000

Note: Arranged by author, ***: “1%, ** 5%, * 10%” significance level

4.3.4. Impulse Response Function (IRF) Analysis

Impulse-response functions are used to study the dynamic effects of shocks within an economic system. These functions track how an unexpected change or shock in one variable influences other variables over a period of time. In this study, the impact of shocks on economic growth were analyzed using these functions. Impulse-response functions are usually used in the context of vector autoregression (VAR) models.

The following diagrams show the effects of the variable "rgrowth" (growth rate of real GDP) on the independent variables over a period of 30 time steps. The horizontal axis denotes the time steps, while the vertical axis represents the reaction. Figure 3.1 shows the impulse-response functions, which show how the growth rate of real GDP reacts to different economic shocks over time. Each graph describes the response of real GDP growth to specific shocks and provides insights into the dynamic impact of these variables on the economy.

The response of the real GDP growth rate to a shock in non-interest public spending, a fiscal policy instrument, is shown in Figure 1. A shock in non-interest public spending initially has a fluctuating effect on the real GDP growth rate. Initially, a negative effect is observed, but in subsequent periods the growth rate reacts positively and this fluctuating effect disappears over time. Another instrument, a shock to borrowing, as shown in chart 2, initially has a negative effect on the growth rate of real GDP. Over time, this effect diminishes and the growth rate changes from negative to positive, but the overall trend remains negative. Finally, according to chart 3, a shock to tax revenues initially has a negative effect on the growth rate of real GDP. This effect diminishes over time, but remains negative.

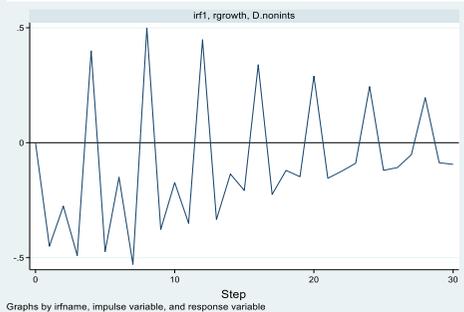
As far as the monetary policy instrument used in this study is concerned, the reaction of the growth rate of real GDP to a shock in the nominal interest rate, as shown in Figure 4: A shock in the nominal interest rate initially has a positive effect on the growth rate of real GDP. Over time, this positive effect diminishes, but no persistent positive reaction is observed. Another monetary policy instrument, the response of the growth rate of real GDP to a shock in the inflation rate (as shown in chart 5), shows that a shock in the inflation rate initially has a large positive effect on the growth rate of real GDP. However, this effect quickly diminishes, becomes negative and then stabilizes at zero.

Finally, let us evaluate the impulse-response functions of the macroeconomic indicators. The 6th chart shows the response of the growth rate of real GDP to a shock in consumption. A consumption shock initially has a negative effect on the growth rate of real GDP. This effect then fluctuates in a positive direction and gradually approaches zero over time. The 7th diagram, which shows the reaction of the growth rate of real GDP to a shock in the unemployment rate, indicates that a shock in the unemployment rate immediately has a positive effect on the growth rate of real GDP. However, this effect quickly turns negative and stabilizes around zero. Finally, the 8th graph signals the response of the real GDP growth rate to an investment shock, indicating that investment shocks initially cause both positive and negative fluctuations in the real GDP growth rate. This fluctuation decreases over time and the effect dissipates.

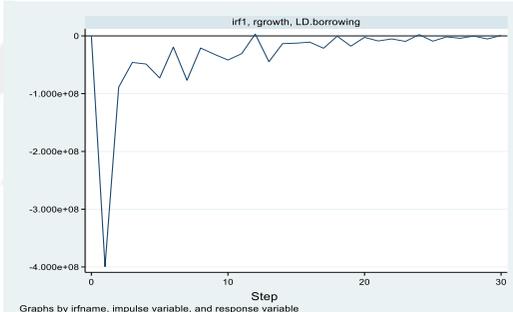
These charts illustrate the responses of the real GDP growth rate to shocks in different macroeconomic variables. Overall, the effects of shocks are initially strong, but diminish and dissipate over time. This suggests that most shocks in the economy have temporary effects and that the economy tends to return to equilibrium in the long run. However, the short-term reactions can vary greatly depending on the nature and extent of the shocks.

Figure 3: Impulse-Response Function

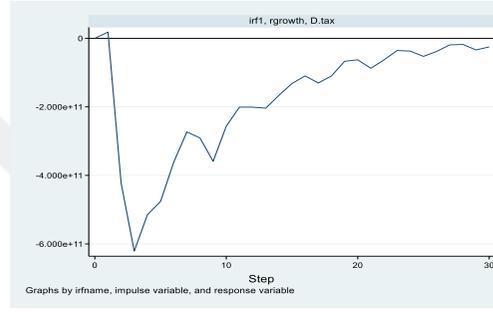
1. Response of Real GDP Growth rate to A shock in Non-Interest Public Expenditures



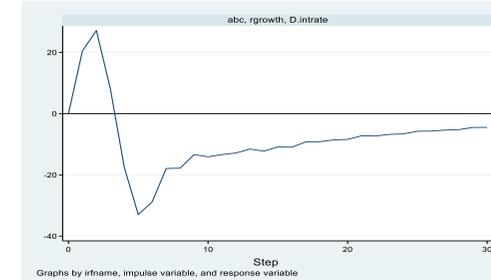
2. Response of Real GDP Growth rate to A shock in Borrowing



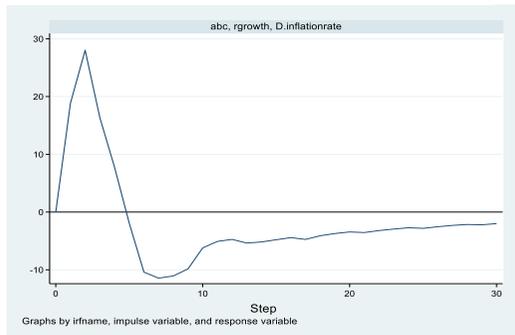
3. Response of Real GDP Growth rate to A shock in Tax Revenue



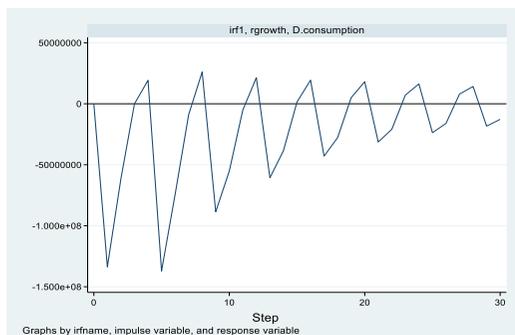
4. Response of Real Growth rate to A Shock in Nominal Interest Rate



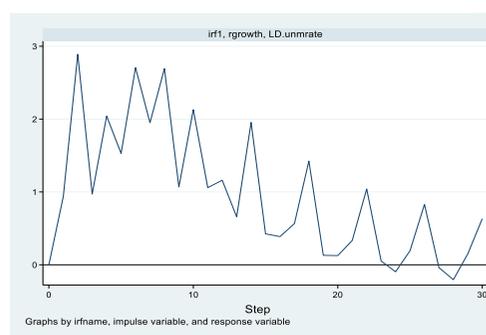
5. Response of Real GDP Growth rate to A shock in Inflation Rate



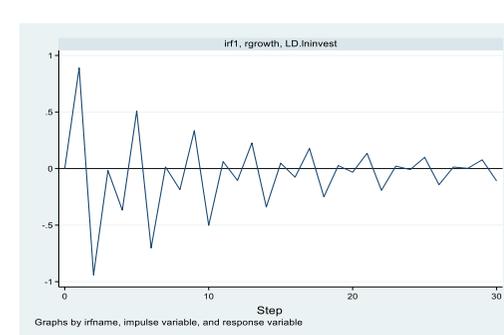
6. Response of Real GDP Growth rate to A shock in Consumption



7. Response of Real GDP Growth rate to A shock in Unemployment rate



8. Response of Real GDP Growth rate to A shock in Investment



4.3.5 Variance Decomposition

Variance decomposition is a method used to analyze how the total variance of a time series model is distributed across different components or shocks. This technique is often used in vector autoregression (VAR) models and helps to determine how much of the variation in the dependent variable can be attributed to each independent variable within the model. It assesses the proportion of variance that each shock or independent variable has on the total variance of the dependent variable in a given time period. The main objective of variance decomposition is to provide insight into the way different factors affect the dependent variable over time and to assess the relative importance of these effects.

The variance decomposition technique, which measures the variance of the model's forecast error, is illustrated in the following tables. By applying variance decomposition, the sources of variance change in the variables included in the model have separated and the percentage of this change attributable to itself and other variables was determined. In this way, the impact of a shock in one variable on the other variable(s) is shown.

The table shows the variance decomposition of the economic growth rate (Y) and provides information on how different factors contribute to its fluctuations over time. First, the total variation in the growth rate is regressed on its own historical values, suggesting that in the short run the growth rate is predominantly influenced by its past performance.

Over time, the contribution of non-interest public expenditure (PE) to economic growth becomes increasingly significant. While PE initially has only a small effect, its influence on the growth rate becomes stronger as time progresses, underlining the importance of government spending for long-term economic growth.

Public borrowing (PB) also proves to be a key factor whose influence on growth increases over the periods analyzed. This suggests that public debt plays a more role in shaping economic outcomes as time progresses. The effects of consumption (C) and taxation (T) on growth also become more important over time, with taxation in particular exerting a notable influence in the later stages.

Investment (I) initially has only a minor impact on growth, but its importance increases, underlining the central role of investment in promoting economic growth. Inflation (INF) and interest rates (INTRATE) also gradually exert a stronger influence on the growth rate, highlighting their crucial role in the broader economic environment. Although the unemployment rate (U) begins to have a stronger influence on growth over time, its impact remains relatively modest compared to other variables.

To summarize, the economic growth rate (Y) is initially largely determined by its own past values, while the importance of other macroeconomic variables increases over time. Variables such as non-interest public spending (PE), public borrowing (PB), consumption (C), taxation (T) and investment (I) become key determinants of growth. This underlines the need for strategic management of these factors in order to promote economic growth. Policy makers should pay particular attention to these variables as they are crucial for ensuring sustainable economic development in the long run.

Table 7: Variance Decomposition

Variance Decomposition of Y:										
Period	S.E.	Y	PB	C	T	PE	I	INF	U	INTRATE
1	0.061104	100.0000 (0.00000)	0.000000 (0.00000)							
2	0.075798	66.95386 (7.71151)	1.862073 (3.04960)	16.74699 (6.27689)	0.045360 (0.82353)	4.663209 (4.01367)	1.340239 (1.47939)	0.569128 (1.23497)	1.169718 (1.96057)	6.649421 (3.71012)
3	0.093731	60.95554 (8.53650)	1.238453 (2.38401)	10.95410 (4.35686)	0.051303 (1.28696)	5.092642 (3.60795)	7.882075 (4.05746)	5.486504 (3.88362)	1.202032 (1.54008)	7.137351 (3.27976)
4	0.099493	54.10338 (8.80345)	1.123378 (3.06686)	10.52727 (4.26180)	3.317123 (4.13044)	4.585938 (3.31017)	7.004155 (3.63252)	4.874192 (3.20090)	7.892613 (3.90117)	6.571947 (2.92925)
5	0.107437	53.70330 (9.49105)	1.638982 (2.71272)	10.58705 (3.87246)	5.914396 (5.67120)	4.236132 (2.95067)	6.193745 (3.14136)	4.996320 (3.08456)	7.093855 (3.30997)	5.636226 (2.57805)
6	0.118251	46.85790 (9.87441)	7.679875 (5.35752)	14.05506 (4.64967)	4.929048 (4.62357)	4.470488 (2.96724)	5.351557 (2.65176)	4.140198 (2.47014)	6.470913 (3.18456)	6.044961 (2.52275)
7	0.127582	45.98223 (10.1602)	8.008703 (4.95282)	12.08753 (4.18360)	5.132635 (4.32346)	3.997713 (2.94961)	6.637868 (3.33502)	6.319001 (3.00062)	5.559954 (2.78322)	6.274372 (2.78665)
8	0.129099	45.05816 (9.95431)	8.084860 (5.21008)	12.14693 (4.18996)	5.017088 (4.46398)	3.910637 (2.84382)	6.499243 (3.33353)	6.335058 (3.13642)	6.666233 (3.12480)	6.281787 (3.00116)
9	0.133207	45.43691 (10.1753)	7.945805 (5.25736)	11.74079 (4.11359)	6.422712 (5.71941)	3.676100 (2.65338)	6.170704 (3.22072)	6.411398 (3.04757)	6.294473 (2.94211)	5.901106 (2.98435)
10	0.138262	43.59111 (10.3200)	8.038584 (5.14784)	12.05089 (4.52959)	8.510497 (7.37096)	3.866827 (2.68447)	5.767694 (3.11235)	6.220142 (2.99498)	6.095537 (2.92371)	5.858714 (3.00301)

Variance Decomposition of PB:										
Period	S.E.	Y	PB	C	T	PE	I	INF	U	INTRATE
1	20097464	4.402497 (4.27464)	95.59750 (4.27464)	0.000000 (0.00000)	0.000000 (0.00000)	0.000000 (0.00000)	0.000000 (0.00000)	0.000000 (0.00000)	0.000000 (0.00000)	0.000000 (0.00000)
2	22157916	4.033078 (3.50169)	81.16693 (6.96281)	2.911616 (3.24952)	2.444532 (2.33885)	1.010687 (1.73266)	0.008625 (0.88307)	8.339218 (4.53222)	0.001047 (0.92788)	0.084268 (1.22846)
3	23098814	4.091002 (3.39177)	75.33632 (7.38737)	3.024891 (3.06236)	7.202421 (4.73034)	0.985782 (2.06126)	0.138194 (1.36984)	8.956947 (3.77194)	0.171442 (1.18869)	0.093004 (1.19946)
4	27130028	2.980303 (2.77858)	55.19798 (8.73357)	3.229274 (3.09173)	30.20357 (9.39379)	0.716586 (1.65372)	0.115919 (1.23685)	7.308459 (2.51669)	0.130046 (0.96450)	0.117866 (1.01886)
5	30910441	4.847238 (3.31340)	44.15891 (8.43302)	2.488158 (2.67934)	38.10805 (10.4767)	0.734812 (1.52746)	0.192254 (1.28969)	9.026802 (3.02239)	0.351380 (1.04659)	0.092405 (0.94796)
6	34787533	6.405242 (4.27706)	44.16632 (7.45968)	2.407768 (2.34754)	32.77842 (9.03253)	0.634999 (1.54567)	0.224335 (1.44907)	11.00250 (4.84417)	2.297358 (2.28516)	0.083049 (1.19037)

7	37038880	6.842965 (4.85692)	41.19270 (7.97682)	2.816046 (2.33520)	29.12080 (8.09905)	1.145623 (1.86307)	0.573823 (2.10979)	12.17461 (5.80736)	5.918395 (3.82703)	0.215038 (1.64370)
8	39730550	6.503637 (4.90530)	36.71830 (7.79918)	4.122310 (2.77999)	25.90052 (7.98305)	1.594871 (1.97820)	0.665508 (2.35420)	14.93476 (6.40515)	9.310518 (5.07305)	0.249587 (1.70974)
9	44886352	5.674705 (4.72139)	33.19612 (6.80094)	7.093482 (3.78107)	20.64977 (9.51861)	2.083801 (2.24505)	0.810818 (2.64930)	20.42914 (6.92878)	9.858905 (5.40729)	0.203254 (1.74434)
10	52757467	4.768342 (4.36112)	28.36454 (6.52961)	10.03892 (4.67393)	16.74394 (11.3621)	1.948025 (2.11513)	0.923902 (2.75580)	27.83867 (7.55137)	9.003832 (5.11936)	0.369825 (2.07744)

Variance Decomposition of C:

Period	S.E.	Y	PB	C	T	PE	I	INF	U	INTRATE
1	13542292	60.89805 (6.64032)	3.086521 (2.28132)	36.01543 (6.01069)	0.000000 (0.00000)	0.000000 (0.00000)	0.000000 (0.00000)	0.000000 (0.00000)	0.000000 (0.00000)	0.000000 (0.00000)
2	16026795	61.54666 (7.24917)	3.698530 (3.17737)	27.19765 (4.85114)	0.136688 (0.91690)	0.798821 (1.86340)	0.502052 (1.32265)	5.071300 (3.70391)	1.040731 (1.54903)	0.007566 (1.00001)
3	16827354	55.83057 (7.98250)	4.968273 (3.81837)	25.61284 (4.86782)	0.370293 (1.84863)	1.164285 (1.83652)	0.932620 (1.60254)	8.101508 (5.91365)	2.955065 (2.68059)	0.064548 (1.72891)
4	18139105	48.08676 (7.96611)	5.441437 (3.81948)	27.96504 (5.83510)	0.912806 (3.78925)	1.234616 (2.04248)	0.853798 (1.58504)	12.75938 (7.18833)	2.649593 (2.54957)	0.096571 (1.80221)
5	20502895	42.64569 (8.42628)	5.676421 (4.39913)	27.04935 (6.23625)	0.829207 (5.65724)	1.373221 (2.12822)	0.751036 (1.42312)	19.23440 (8.05604)	2.342600 (2.25232)	0.098075 (1.77458)
6	22588672	37.00493 (8.90862)	5.507392 (4.75370)	23.36955 (6.08244)	1.171612 (5.78056)	1.233793 (2.08002)	1.488193 (2.08489)	26.33129 (8.97069)	3.723533 (2.73991)	0.169705 (1.67263)
7	24670873	31.04801 (9.17590)	6.890745 (5.57770)	22.45379 (6.48181)	3.745041 (5.69376)	1.034321 (2.31398)	1.248903 (1.95993)	28.28701 (8.78022)	4.927684 (3.71152)	0.364499 (1.89227)
8	28009548	24.11749 (9.03727)	12.11604 (6.60345)	23.42381 (7.16946)	5.475461 (6.22053)	0.803569 (2.39695)	1.001823 (1.92563)	28.77500 (8.17729)	3.989358 (3.85363)	0.297442 (2.05609)
9	32685657	19.38279 (8.73644)	17.57352 (7.89601)	22.13605 (7.43212)	5.335509 (7.09828)	0.603439 (2.43966)	0.992498 (1.93279)	30.64706 (8.22110)	2.970148 (3.65032)	0.358986 (2.00809)
10	36950595	15.79395 (8.07152)	19.73060 (8.47299)	20.03718 (7.63879)	5.729339 (8.31507)	0.509855 (2.54800)	1.413425 (2.54246)	33.83153 (8.96591)	2.519170 (3.88346)	0.434957 (2.13886)

Variance Decomposition of T:

Period	S.E.	Y	PB	C	T	PE	I	INF	U	INTRATE
1	2.49E+10	8.001191 (5.32811)	0.231924 (2.25433)	16.05560 (6.85668)	75.71129 (7.94286)	0.000000 (0.00000)	0.000000 (0.00000)	0.000000 (0.00000)	0.000000 (0.00000)	0.000000 (0.00000)
2	3.92E+10	3.263096 (2.83111)	0.694379 (2.09321)	6.523886 (3.33076)	81.67846 (6.06732)	0.008729 (0.61280)	0.009005 (0.66340)	7.331082 (3.43703)	0.463709 (0.83764)	0.027659 (0.66821)
3	5.51E+10	4.652673 (3.63394)	13.49032 (6.32816)	3.882191 (2.70691)	61.25094 (7.73973)	0.057067 (0.92221)	0.091946 (1.26001)	13.67181 (5.27082)	2.874265 (2.59637)	0.028789 (1.06190)

4	6.32E+10	5.713545 (4.92826)	18.81756 (8.19840)	4.235027 (2.84918)	47.87176 (8.30189)	0.235827 (1.55548)	0.211350 (2.01781)	14.92450 (6.07483)	7.686229 (4.85516)	0.304204 (1.85379)
5	6.97E+10	5.450467 (5.19190)	15.67119 (8.10596)	5.277704 (3.64378)	39.97313 (8.04822)	0.792049 (2.10745)	0.455494 (2.67535)	18.67576 (6.78006)	13.06013 (6.23922)	0.644082 (2.36486)
6	7.98E+10	4.399068 (4.70985)	14.49753 (6.52516)	8.168490 (4.69920)	30.57428 (8.95144)	1.471960 (2.37956)	0.649394 (2.93766)	24.18074 (7.57656)	15.43634 (6.55506)	0.622200 (2.16476)
7	9.70E+10	3.499616 (4.14127)	16.58514 (5.94755)	10.99757 (5.50885)	21.65002 (10.8141)	1.722034 (2.47029)	0.747389 (2.95405)	30.72773 (8.35494)	13.64688 (6.04310)	0.423624 (1.85619)
8	1.19E+11	3.192022 (3.98447)	14.76809 (6.18201)	13.40141 (6.13742)	15.67919 (11.9341)	1.624854 (2.59708)	0.983408 (3.13897)	38.51583 (9.73434)	11.40500 (5.68899)	0.430196 (1.97008)
9	1.42E+11	3.025706 (4.06499)	12.00025 (6.22345)	15.18167 (6.91558)	10.99590 (11.2799)	1.583290 (2.77617)	1.527911 (3.66503)	44.41942 (10.8584)	10.70587 (5.98292)	0.559987 (2.35628)
10	1.69E+11	2.654140 (4.08003)	10.76368 (6.26989)	16.01779 (7.45419)	10.36783 (9.67217)	1.579215 (2.83626)	2.040263 (4.11819)	45.31311 (10.7872)	10.59186 (6.68722)	0.672128 (2.67656)

Variance Decomposition of PE:

Period	S.E.	Y	PB	C	T	PE	I	INF	U	INTRATE
1	0.088183	3.856674 (3.42672)	2.179776 (2.76514)	0.430822 (2.54070)	0.293053 (1.69160)	93.23968 (5.10656)	0.000000 (0.00000)	0.000000 (0.00000)	0.000000 (0.00000)	0.000000 (0.00000)
2	0.108936	17.02573 (6.78087)	3.716555 (3.08978)	2.300120 (3.77550)	1.341605 (2.54897)	62.37563 (7.04400)	9.590208 (3.93162)	2.544831 (3.09587)	0.027441 (0.81962)	1.077887 (1.76417)
3	0.119995	21.35789 (7.36543)	3.063382 (2.82318)	2.473855 (3.52083)	1.327281 (2.50068)	57.09167 (7.34747)	9.573981 (3.65909)	3.526232 (2.69012)	0.230144 (1.21104)	1.355567 (2.23712)
4	0.123909	20.72221 (6.58313)	3.484139 (2.90215)	2.420247 (3.32030)	2.559248 (2.83610)	53.54838 (7.29717)	9.001125 (3.32950)	3.493733 (3.01345)	2.254529 (2.26736)	2.516384 (3.11406)
5	0.137747	20.99470 (5.73431)	3.022594 (2.90702)	3.340150 (3.14662)	5.361404 (5.25826)	48.88868 (7.71156)	9.268331 (3.31660)	2.908223 (2.63626)	4.177808 (3.28928)	2.038105 (2.86727)
6	0.147816	21.97602 (6.41250)	4.167581 (3.97028)	3.612303 (3.17467)	8.658125 (6.81770)	42.45545 (7.89739)	8.941941 (3.45084)	3.776278 (2.93525)	4.287768 (3.51815)	2.124533 (3.11764)
7	0.154046	20.59916 (6.75440)	6.904913 (6.49833)	3.591849 (3.13081)	9.339922 (6.91847)	40.07133 (8.46264)	8.835228 (3.61437)	3.575579 (3.35028)	4.221744 (3.23246)	2.860272 (3.60416)
8	0.158449	20.16552 (6.31838)	8.272164 (7.59162)	3.453533 (3.02688)	9.472835 (6.99526)	37.90665 (8.42626)	8.424332 (3.43325)	3.514316 (4.01367)	3.990828 (3.30114)	4.799825 (4.30311)
9	0.164304	19.77113 (6.06780)	7.712476 (6.99802)	4.671710 (3.59567)	10.02771 (8.14119)	36.01297 (8.23641)	8.511348 (3.37576)	4.376227 (4.54310)	3.713048 (3.34704)	5.203390 (4.63267)
10	0.175071	18.22097 (6.18654)	6.800817 (6.42025)	4.309828 (3.62411)	11.99853 (10.3018)	31.91247 (7.98276)	7.811602 (3.51583)	10.03573 (6.23357)	3.427791 (3.29897)	5.482270 (4.85157)

Variance Decomposition of I:

Period	S.E.	Y	PB	C	T	PE	I	INF	U	INTRATE
--------	------	---	----	---	---	----	---	-----	---	---------

1	0.094010	62.89255	0.012980	1.758339	0.185503	0.816827	34.33380	0.000000	0.000000	0.000000
		(6.52075)	(0.53885)	(1.93320)	(1.07879)	(1.02829)	(6.19979)	(0.00000)	(0.00000)	(0.00000)
2	0.112916	60.99802	0.098845	1.371500	0.449910	4.225714	24.51946	0.076406	0.012226	8.247916
		(7.62957)	(1.36693)	(2.04409)	(1.30462)	(3.38707)	(4.15434)	(0.78595)	(0.76573)	(4.25281)
3	0.131473	48.68859	0.083880	1.106795	0.333009	5.169531	25.38450	0.304292	0.568581	18.36082
		(8.45840)	(2.04771)	(2.20354)	(1.36761)	(3.13569)	(5.67609)	(1.31796)	(1.54585)	(6.69169)
4	0.144665	41.56519	0.155211	0.979881	0.485037	4.270369	22.11889	0.310199	0.581292	29.53394
		(8.28385)	(1.89452)	(2.24288)	(2.26529)	(3.04045)	(5.76576)	(1.70339)	(1.67066)	(8.57093)
5	0.161034	38.64345	0.474778	0.874034	0.526886	4.858880	20.70246	0.383343	0.582922	32.95324
		(8.34705)	(2.39301)	(2.49973)	(3.96551)	(3.54198)	(6.23723)	(1.89590)	(1.80356)	(8.99762)
6	0.172957	34.24830	0.449545	1.945898	0.534463	4.236531	18.19138	1.338871	0.697081	38.35793
		(8.18310)	(2.73280)	(3.33974)	(5.05614)	(3.20830)	(5.74842)	(2.91857)	(1.99921)	(9.82700)
7	0.183464	30.55555	0.400635	1.869763	0.601333	4.335072	18.27301	1.324897	0.816987	41.82275
		(8.01727)	(3.68757)	(3.65511)	(5.37107)	(3.76942)	(6.10870)	(3.44895)	(2.28518)	(10.3157)
8	0.192635	27.76038	0.483930	1.760615	1.054370	3.933868	16.98618	1.708644	1.799914	44.51210
		(7.94750)	(4.39240)	(3.90904)	(5.99575)	(3.70538)	(5.79739)	(4.10163)	(3.10183)	(10.7587)
9	0.202278	26.27404	1.166877	1.598380	1.732624	3.909371	16.11279	2.237633	2.576655	44.39163
		(8.23691)	(5.04114)	(4.13421)	(7.32505)	(4.15027)	(5.66106)	(4.48669)	(3.96242)	(11.1982)
10	0.210690	24.47425	1.893407	1.597802	2.458977	3.610065	14.90965	3.155214	3.365155	44.53547
		(8.28731)	(5.88548)	(4.38650)	(9.04116)	(3.94734)	(5.28001)	(5.13881)	(4.68744)	(11.8129)

Variance Decomposition of INF:

Period	S.E.	Y	PB	C	T	PE	I	INF	U	INTRATE
1	14.49198	5.218903	3.995349	2.725710	28.59711	0.241425	0.415768	58.80573	0.000000	0.000000
		(4.75965)	(4.34103)	(3.16439)	(8.19722)	(1.04719)	(1.11172)	(7.92197)	(0.00000)	(0.00000)
2	27.54035	1.936368	1.254749	11.12329	45.79019	0.124972	0.385875	38.90065	0.417065	0.066838
		(2.94122)	(2.34835)	(5.96189)	(8.01082)	(0.77503)	(1.15117)	(7.31611)	(0.73588)	(0.46113)
3	41.70612	2.024635	0.654662	9.946960	37.59862	0.265993	0.658713	46.58134	2.192046	0.077029
		(3.36873)	(2.22974)	(5.62684)	(9.05318)	(1.24479)	(2.20814)	(9.22139)	(2.06594)	(0.86128)
4	55.77774	2.772261	1.230681	11.78939	24.82366	0.630310	1.070640	51.90748	5.681975	0.093598
		(4.28732)	(2.81605)	(6.41035)	(9.20709)	(1.97287)	(3.20513)	(10.2156)	(3.87464)	(1.30571)
5	69.31027	3.118689	0.972292	14.20681	16.17564	1.040969	1.402048	53.63152	9.349083	0.102952
		(4.70846)	(2.72558)	(7.20583)	(7.96744)	(2.52886)	(3.98190)	(10.0481)	(5.49171)	(1.65243)
6	87.76439	2.489469	4.127387	16.29589	11.50701	1.317469	1.601946	52.27710	10.31869	0.065040
		(4.30775)	(3.77433)	(7.65827)	(6.23729)	(2.67057)	(4.26360)	(9.45485)	(6.09383)	(1.82950)
7	112.1053	1.655833	10.14570	17.90079	8.049870	1.364609	1.722031	49.80375	9.197134	0.160279
		(3.64713)	(6.13177)	(7.94539)	(5.28917)	(2.65351)	(4.28337)	(9.40167)	(6.17371)	(2.07672)
8	141.3091	1.149476	14.98604	18.50838	5.725728	1.273491	1.855778	48.40342	7.636408	0.461281
		(3.25577)	(7.73143)	(8.27015)	(4.97157)	(2.66487)	(4.31921)	(9.62526)	(6.09873)	(2.50235)
9	173.2007	0.878776	16.87581	19.05433	5.015257	1.127159	2.045941	47.65276	6.452742	0.897226
		(3.13770)	(8.33118)	(8.69867)	(5.07206)	(2.70212)	(4.46561)	(9.88533)	(6.13427)	(3.07456)

10	208.2627	0.646352 (3.05194)	17.85244 (8.52407)	19.22431 (9.11307)	6.621013 (5.78033)	0.978395 (2.70224)	2.273728 (4.64861)	45.48673 (9.99238)	5.551060 (6.29448)	1.365972 (3.67571)
----	----------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

Variance Decomposition of U:

Period	S.E.	Y	PB	C	T	PE	I	INF	U	INTRATE
1	0.698584	8.026168 (5.19739)	0.003311 (1.32509)	0.057450 (1.45916)	4.693312 (3.72274)	2.295858 (3.31575)	0.925577 (2.48687)	0.843082 (2.12513)	83.15524 (7.28788)	0.000000 (0.00000)
2	1.067673	11.00098 (6.08191)	0.001432 (1.91615)	1.181127 (2.98586)	4.426209 (3.53009)	5.119605 (3.05008)	1.279454 (1.51434)	0.369257 (1.47900)	76.29579 (8.05001)	0.326150 (0.79194)
3	1.260348	9.939018 (6.14610)	0.151059 (2.41034)	2.775843 (4.26655)	4.297859 (3.81898)	4.649044 (3.43279)	3.254731 (2.61436)	0.398403 (2.06068)	73.70852 (9.17128)	0.825523 (1.55552)
4	1.364752	9.185401 (6.03952)	0.159946 (2.73425)	2.851875 (4.46265)	4.959539 (4.66708)	4.265846 (3.74875)	3.140578 (2.74049)	0.593267 (2.95454)	73.00837 (9.63148)	1.835181 (2.50909)
5	1.457212	8.551655 (5.84091)	0.140677 (3.22236)	2.508380 (4.09170)	5.418243 (6.24165)	3.782823 (3.79753)	2.894193 (2.65003)	1.151139 (3.59483)	72.29370 (9.92577)	3.259194 (3.35326)
6	1.537123	7.820576 (5.09108)	0.155741 (3.95879)	2.294885 (3.71544)	5.233885 (7.68110)	3.710245 (4.07228)	2.654094 (2.40258)	1.674885 (4.40889)	71.00632 (10.4148)	5.449365 (4.28910)
7	1.594705	7.845422 (4.69042)	0.156520 (5.14251)	2.205608 (3.85849)	4.883658 (8.13033)	3.548335 (3.99546)	2.739788 (2.39069)	2.068867 (5.13254)	69.28879 (11.0245)	7.263015 (5.33647)
8	1.637749	7.677271 (4.62087)	0.460569 (6.27140)	2.248117 (3.99025)	4.634183 (8.52152)	3.591498 (3.93768)	2.616351 (2.28767)	3.197836 (5.76578)	67.19341 (11.4348)	8.380769 (6.31239)
9	1.682735	7.382934 (4.61175)	1.151906 (7.08881)	2.229080 (4.06963)	4.453861 (8.93212)	3.593299 (3.81725)	2.478618 (2.21914)	5.072361 (6.12145)	64.82139 (11.7964)	8.816553 (6.95364)
10	1.737310	7.645726 (4.79776)	1.929221 (7.52434)	2.235986 (4.17300)	4.523356 (9.63609)	3.739298 (3.74586)	2.347548 (2.19179)	7.038759 (6.26842)	61.65486 (12.1603)	8.885251 (7.24432)

Variance Decomposition of INTRATE:

Period	S.E.	Y	PB	C	T	PE	I	INF	U	INTRATE
1	6.352761	0.011534 (1.46819)	0.303618 (1.93109)	1.741615 (3.02437)	1.609134 (2.51574)	5.407770 (4.06969)	0.004846 (1.21764)	0.232896 (2.33183)	2.276838 (2.81624)	88.41175 (6.12732)
2	9.329450	0.075260 (1.77687)	0.166847 (2.21708)	2.458210 (4.10958)	1.093911 (2.38591)	2.616087 (2.66548)	1.281274 (2.69416)	0.409816 (2.62869)	1.058999 (2.09006)	90.83960 (6.50226)
3	11.14613	1.158086 (2.87077)	0.310772 (2.51638)	3.400979 (4.83024)	0.879304 (2.12688)	1.861765 (2.52797)	2.917193 (4.16064)	1.150879 (3.44330)	1.863155 (2.66838)	86.45787 (8.12980)
4	12.39978	2.126425 (3.58402)	0.290573 (2.74830)	3.878043 (5.15219)	1.959367 (3.70787)	1.504651 (2.72475)	3.058582 (4.38280)	2.121876 (4.57774)	3.793224 (4.37111)	81.26726 (9.52818)
5	13.44175	2.187622 (3.76188)	0.692504 (3.43563)	3.985790 (5.50226)	5.499256 (7.15770)	1.280430 (2.98087)	2.932772 (4.24090)	2.434639 (4.78602)	5.475549 (5.53689)	75.51144 (11.0397)
6	14.52386	2.051423 (3.94483)	2.116076 (4.80043)	3.737964 (5.69703)	10.42461 (10.0589)	1.121436 (3.17398)	2.669128 (4.02444)	2.380719 (4.49881)	7.136376 (6.41062)	68.36227 (12.5179)

7	15.62541	1.783595	4.854416	3.265875	14.43060	0.969054	2.494472	2.141146	9.313311	60.74753
		(4.02636)	(6.59795)	(5.74791)	(11.4235)	(3.39158)	(3.95754)	(4.19694)	(7.26106)	(13.5557)
8	16.70938	1.619556	7.747044	2.872804	16.94423	0.857896	2.249716	1.909070	12.09595	53.70374
		(4.06631)	(8.29918)	(5.92810)	(11.8579)	(3.44016)	(3.81248)	(4.01147)	(8.11762)	(14.0825)
9	17.73928	1.700016	9.260481	2.619295	19.25844	0.841551	2.035149	1.702064	14.79040	47.79260
		(4.10994)	(9.09196)	(6.09863)	(12.5607)	(3.41348)	(3.68731)	(3.87894)	(8.94821)	(14.1671)
10	18.90421	1.855875	9.414250	2.546036	22.33963	0.877434	1.822613	1.934560	17.08868	42.12093
		(4.27056)	(9.12158)	(6.16751)	(13.8937)	(3.35236)	(3.57653)	(3.99026)	(9.71054)	(13.9817)

Cholesky One S.D. (d.f. adjusted) Innovations

Cholesky ordering: Y PB C T PE I INF U INTRATE

Standard errors: Monte Carlo (100 repetitions) standard deviations in parentheses

4.3.6 Granger causality test results

To determine whether one time series can predict another in the Granger sense, statisticians use the Granger causality test. This test evaluates whether past values of one series provide statistically significant information for predicting future values of another series. More specifically, if historical data of series X can significantly predict future values of series Y, then X is said to be the cause of Y.

Given the presence of a cointegration relationship between the variables, the short-term causal dynamics in the model are assessed using the Granger causality test. The table below illustrates the impact of these variables on economic growth based on the test results.

Table 8: Granger Casualty tests results

Null Hypothesis	Chi-Square Statistics	df	Probability level
PE does not Granger-cause rgrowth	9,29	4	0.0542*
PB does not Granger-cause rgrowth	2.40	4	0.6627
T does not Granger-cause rgrowth	9,63	4	0,0471**
Intrate does not Granger-cause rgrowth	31.89	4	0.0000***
Inf does not Granger-cause rgrowth	46.56	4	0,0000***
U does not Granger-cause rgrowth	10,20	4	0.0371**
I does not Granger-cause rgrowth	15,95	4	0,0031***
C does not Granger-cause rgrowth	30,79	4	0,0000***

Note: Arranged by author, *** “1%, ** - 5%, * - 10%” significance level

This table shows the results of the Granger causality tests for various variables on the real growth rate (rgrowth). The Granger causality test is performed to determine whether past values of one variable can be used to predict future values of another variable.

This table should show the effects of the variables on growth in three stages as follows:

1. The hypothesis that nominal interest rate (int), investment (I), inflation (Inf) and consumption (C) are not Granger-causes of growth is rejected at the 1% significance level. This shows that these variables have a very strong influence on growth.
2. On the other hand, the hypothesis that the unemployment rate (U), tax revenue (T) and non-interest government expenditure (PE) are not Granger-causes of r-growth is rejected at the 5% significance level, indicating that the unemployment rate (U), tax revenue (T) and non-interest government expenditure (PE) have a significant impact on r-growth.
3. Finally, the hypothesis that public borrowing (PB) is not a Granger cause of rgrowth cannot be rejected. This indicates that these variables do not have a significant influence on r-growth.

4.3.7. The implications of these factors throughout periods of crisis

There is no doubt that the economy has performed well in years other than the crisis years, bringing with it considerable economic growth and development. But when an economy has one or more crisis years, this is accompanied by a number of negative aspects. Economic prosperity declines dramatically due to economic policy disruptions, income declines, price increases for products and services and higher unemployment. As a result, it is crucial that policymakers monitor the results of economic and fiscal policies implemented during crisis years to minimize the effect of future crises.

This study analyzes the impact of fiscal and monetary policies on economic growth from 2000 to 2023, providing a critical framework to assess how fiscal and monetary policy variables affect economic growth, especially in times of crisis. Given the importance of these policies in addressing economic challenges, a “dummy variable” was included in the model shown in “Equation 1.1” to refine its design.

The model containing the dummy variable is reformulated as follows:

$$Y_t = A_0 + B_1Y_{t-1} + B_2Y_{t-2} + \dots + B_pY_{t-p} + CD_t + \varepsilon_t \quad (1.1)$$

where:

- Y_t represents the values of all endogenous variables (in vector form) at time t .
- A is a column vector of length $nx1$ containing constants.
- p represents the number of lags. Consequently, VAR(p) is considered a VAR model of order p .
- B_1, B_2, \dots, B_p denote the coefficient matrices of the model parameters.-
- D_t , the dummy variable representing crisis years (1 during crisis years, 0 otherwise)
- C , the coefficient of the dummy variable D_t
- ε_t , represents the error terms (in vector form) and is generally assumed to be normally distributed.

The dummy variables were created by taking into account the impact of the year before the crisis and the year after the crisis. Therefore, the year before the crisis, the crisis year and the first year after the crisis are coded as 1; the other years are coded as 0. The regression model created is as follows: (Arslan at all, 2020)

$$Y_t = b_0 + b_1 \text{LogPE} + b_2 \text{LogPB} + b_3 \text{LogT} + b_4 \text{Rint} + b_5 \text{inf} + b_6 U + b_7 \text{LogC} + b_8 \text{LogI} + b_{11} D1_t + b_{12} D2_t + b_{13} D3_t + \varepsilon_t \quad (1.4)$$

D1: A dummy variable representing the 2001 Turkish crisis, taking the value 1 in the years 2001 and 2002 and 0 in other years.

D2: A dummy variable representing the 2008 global financial crisis, taking the value 1 in the years 2008 and 2009, and 0 in other years.

D3: A dummy variable representing the 2020 COVID crisis, taking the value 1 in the years 2020 and 2021, and 0 in other years.

You can use this equation to model the effects of crisis years on Y_t . The specific effects of the crisis years are captured by the coefficient C. The significance of the coefficient C indicates whether the impact of the crisis years on Y_t are significant.

The autocorrelation problem was corrected with the “Prais–Winsten AR(1)” correction for the entire model and the new results obtained after the autocorrelation correction were taken into account.

Table 9: Regression Analysis Results for the Model Corrected for Autocorrelation

Variables	Coefficients
Y	.337932 (0.000)
PE	.1562766 (0.000)
PB	-7.23e-10 (0.000)
T	-5.12e-13 (0.000)
$\dot{I}nt$	-.0013115 (0.000)
Inf	-.0018533 (0.009)
C	3.17e-09 (0.000)
I	.1745362 (0.000)
U	-.010111 (0.001)
d2001	-.0140048 (0.048)
d2008	-.0190265 (0.000)
d2020	-.0448102 (0.005)
R ² = 0.9213	
Root MSE= .3767	
Durbin–Watson statistic (original) = 1.861670	
Durbin–Watson statistic (transformed) = 1.930218	

The Durbin-Watson statistic is used to test for autocorrelation in the model. A value close to 2 usually means that there is no autocorrelation. In this case, both values are close to 2, indicating that the model has successfully handled autocorrelation issues. In addition, the Root Mean Squared Error (RMSE) quantifies the average distance between the model's predictions and the actual values. A lower RMSE value indicates that the predictions of the model match the observed data more closely.

This analysis highlights the importance of various macroeconomic factors Türkiye economic growth in Turkey. Notably, the impacts of consumption, investment and public policy on growth are especially noteworthy. In addition, the negative effects of times of crisis were also clearly demonstrated. The results presented provide policy makers with important pointers for the design of future economic strategies.

The analysis shows that GDP growth in the previous period has a positive and statistically significant influence on current growth (coefficient: 0.337932, p-value: 0.000). It can be shown that consumption has a positive influence on economic growth (coefficient: 3.17e-09, p-value: 0.000). Interest-free public spending is identified as a decisive factor for growth and shows a positive effect (coefficient: 0.1562766, p-value: 0.000). In addition, investment has a positive impact on growth (coefficient: 0.1745362, p-value: 0.000), indicating that increasing investment is a key element in promoting economic growth. The results of these four variables indicate a significant potential to increase economic growth.

Conversely, borrowing has a negative effect on growth (coefficient: -7.23e-10, p-value: 0.000), and the tax burden also impairs growth (coefficient: -5.12e-13, p-value: 0.000). In addition, interest rates have a negative impact on growth (coefficient: -0.0013115, p-value: 0.000). The unemployment rate has a demonstrably negative effect on growth (coefficient: -0.010111, p-value: 0.001), as high unemployment can reduce economic activity. The inflation rate also has a negative impact on growth (coefficient: -0.0018533, p-value: 0.009). These results indicate that high debt, high inflation rates and high tax and interest rates can limit economic growth.

To summarize, the crises of 2001, 2008 and 2020 each had a significant negative effect on Türkiye's economic growth. The findings illustrate that times of crisis restrict economic activity and diminish growth rates. This observation is widely supported in the academic literature, as numerous studies emphasize the adverse effects of economic crises on the overall growth performance of countries. The mechanisms by which crises negatively affect economic components such as investment and consumption, increase unemployment rates and strain public finances contribute to long-term negative effects on growth. In this context, it is crucial for policy makers to develop effective strategies to revive economic growth in the post-crisis period. Overcoming the negative effects of crises and achieving sustainable growth targets requires the implementation of robust fiscal and monetary policies in addition to measures to increase employment and promote investment.

The table above encompasses the overall effects of monetary and fiscal policy implemented on the dependent variable during the three crisis periods. However, for these results to be more meaningful for policy makers, it is crucial to examine each crisis period separately. This approach provides a clearer understanding of the extent to which the economic and fiscal policy measures implemented during a single crisis period affected economic growth. Therefore, we will attempt to understand the effects of policy on growth more comprehensively by examining the results of regression models that analyze each period independently. This detailed analysis will help policymakers shape their decisions when faced with similar crises in the future.

Table 10: Regression Analysis Results for the Model Corrected for Autocorrelation-for 2001 Crisis

Variables	Coefficients
Y	.3636676 (0.000)
PE	.1660795 (0.000)
PB	-8.56e-10 (0.003)
T	-5.53e-13 (0.000)
İnt	-.0015268 (0.000)
Inf	-.0030085 (0.001)
C	3.01e-09 (0,000)
I	.1941684 (0.000)
U	-.0067315 (0.018)
d2001	-.0760527 (0.008)
R ² = 0.9130	
Root MSE= .3754	
Durbin-Watson statistic (original) = 2.020535	
Durbin-Watson statistic (transformed) = 1.930046	

This analysis provides a thorough assessment of the impact of the 2001 crisis on the Turkish economy. The findings demonstrate that the 2001 crisis had a remarkable and enduring adverse effect on the growth rate of real GDP. The lagged "d2001-dummy" variable indicating the crisis period reveals a considerable decline in growth and emphasizes the long and difficult recovery period after the crisis.

With regard to fiscal policy instruments, it can be seen that higher interest-free public spending has a positive impact on the growth rate. Conversely, higher borrowing has a negative impact on growth. Rising tax revenues also have a negative effect on growth.

In the case of monetary policy instruments, interest rate and inflation fluctuations have a negative impact on economic growth. The analysis of other independent variables indicates that increased consumer spending has a positive and statistically significant effect on growth. Furthermore, an increase in the unemployment rate has a negative effect on growth, while investment spending has a positive effect on economic growth.

Table 11: Regression Analysis Results for the Model Corrected for Autocorrelation-for 2008 Crisis

Variables	Coefficients
Y	.3548216 (0.000)
PE	.1637977 (0.000)
PB	-8.05e-10 (0.000)
T	-5.19e-13 (0.000)
İnt	-.001227 (0.000)
Inf	-.0030146 (0.001)
C	3.01e-09 (0.000)
I	.1765294 (0.000)
U	-.009172 (0.006)
d2008	-.0116292 (0.015)
R ² = 0. 0.9217	
Root MSE= .3685	
Durbin–Watson statistic (original) = 2.042386	
Durbin–Watson statistic (transformed) = 1.974134	

This analysis examines in detail the impact of the 2008 crisis on the Turkish economy. The results show that the 2008 crisis had a significant and long-lasting adverse impact on the growth rate of real GDP. The lagged "d2008-dummy" variable, which represents the crisis period, indicates a significant decline in the growth rate. This underlines the difficult and protracted nature of the recovery process that followed the crisis.

In terms of fiscal policy instruments, the increase in non-interest public spending had a positive impact on the growth rate. However, it was found that an increase in borrowing had a negative impact on growth. It was also found that increasing tax revenues also had a negative effect on growth. When examining monetary policy instruments, it was found that changes in interest rates and inflation had a negative effect on growth.

When analyzing the other independent variables, it was found that the increase in consumer spending had a positive and statistically significant effect on growth, while the increase in the unemployment rate had a negative effect on growth. Investment spending also had a positive effect on growth.

Table 12: Regression Analysis Results for the Model Corrected for Autocorrelation-for 2020 Crisis

Variables	Coefficients
Y	.3481337 (0.000)
PE	.17552 (0.000)
PB	-8.27e-1 (0.000)
T	-5.13e-13 (0.000)
İnt	-.0012758 (0.000)
Inf	-.0020834 (0.003)
C	3.14e-09 (0,000)
I	.1851716 (0.000)
U	-.0093617 (0.003)
d2020	-.0567857 (0.000)
R ² = 0.9426	
Root MSE= .0327	
Durbin–Watson statistic (original) = 2.353371	
Durbin–Watson statistic (transformed) = 2.013023	

This analysis examines how the 2020 crisis has affected Türkiye's economy, particularly in terms of real GDP growth. The results show that economic growth was significantly and sustainably affected by the 2020 crisis, as shown by the lagged variable "d2020-dummy". The substantial decline in the growth rate correlated with this variable illustrates the difficulties in economic recovery and the profound and long-lasting effects of the crisis.

The analysis of fiscal policy instruments shows that an increase in interest-free government spending has a positive effect on the growth rate. However, the analysis also reveals that higher government borrowing has a negative impact on economic growth. Furthermore, it is observed that an increase in tax revenues has a negative effect on growth, which indicates that fiscal burdens can restrict economic activity.

With regard to monetary policy, changes in interest rates are shown to have a significant negative effect on growth, as do shifts in inflation rates. These results suggest that both rising interest rates and inflation can dampen economic growth by likely increasing borrowing costs and reducing the purchasing power of consumers and businesses.

Looking at other independent variables, the increase in consumer spending is positively correlated with growth and statistically significant, underlining the crucial role of consumer spending as a driver of economic growth. Conversely, an increase in the unemployment rate has a negative effect on growth, which points to the importance of labor market conditions for economic performance. Investment spending also has a positive effect on growth, which indicates that capital investment is crucial for maintaining economic momentum.

To summarise, this analysis highlights the persistent negative effects of the 2001, 2008 and 2020 crises on Türkiye's economic growth while detailing the role of other important macroeconomic variables affecting growth. The results clearly show that there are growth-enhancing factors such as consumption, public spending and investment as well as growth-inhibiting factors such as borrowing, tax burden, unemployment, high interest rates and inflation. In addition, the dual nature of fiscal and monetary policy becomes clear: while some measures promote growth, others can act as potential obstacles. These findings are a valuable guide for policy makers as they point to the need for strategies that mitigate the adverse effects of crises and promote sustainable economic growth.



SECTION 5: CONCLUSION

From the comprehensive analysis and findings of this paper, it is clear that the economic policy measures implemented by Türkiye during the crises of 2001, 2008 and 2019 had a significant impact on the country's economic development. This study contributes to a broader understanding of how Türkiye and other developing countries can manage economic crises through strategic policy interventions. In particular, the analysis presented in this study highlights the crucial impact of fiscal and monetary policies on Türkiye's economic growth after the 2001, 2008 and 2020 crises. By including a dummy variable in the econometric model, the study provides valuable insights into how the effects of fiscal and monetary policies can vary during times of crisis.

The econometric analysis indicates that fiscal policy and its direct impacts were effective in stabilizing the economy in the early stages of the crises. Tax cuts, increased public spending and strategic government borrowing may have been key factors in boosting aggregate demand and reviving economic activity. The study also reveals a positive correlation between public spending, one of the most important instruments of fiscal policy, and growth rates, which underlines the effectiveness of strategic fiscal interventions in promoting economic expansion. However, the level of borrowing must also be carefully managed to minimize the negative effects of government debt on economic growth. The analysis shows that rising debt should not be overlooked as it can have a negative effects on growth. While government spending can boost growth, over-reliance on borrowing could lead to unsustainable debt levels and ultimately hurt economic performance. Fiscal policy could be restructured to support economic growth by lowering the tax burden, which could mitigate the negative impact on consumption and investment.

Conversely, monetary policy could be crucial to ensure medium to long-term economic stability. Central bank adjustments to interest rates, reserve requirements and open market operations generally create the essential conditions for controlling inflation, stabilizing the currency and creating an environment conducive to sustainable economic growth. Within this framework, changes in interest rates and inflation can prove to be important determinants of economic outcomes as they have a significant impact on the growth curve. On the other hand, the results of this study suggest that the central bank should consider the potential negative effects on economic growth when setting interest rates, the most effective tool of monetary policy. Rising interest rates can put pressure on investment and consumption. Higher interest rates can increase borrowing costs, reduce investment and dampen consumer spending, while inflation can erode purchasing power and reduce consumption, which could lead to an overall slowdown in the economy. Economic analysis therefore indicates that high interest rates can have a negative impact on economic growth.

Analyzing other important macroeconomic variables deepens the understanding of economic growth dynamics. For example, consumer spending is positively correlated with growth, reaffirming the crucial role of consumer spending as a driver of economic activity. Investment spending can also make a positive contribution to growth. Conversely, an increase in unemployment can have a negative impact on growth, which underlines the central importance of robust labor market conditions for economic performance.

The case studies of the 2001, 2008 and 2019 crises underline the importance of coordinated policy responses. During the 2001 crisis, the Transition to a Strong Economy Program was crucial for restoring confidence and rebuilding the financial sector. During the 2008 global financial crisis, Türkiye implemented expansionary fiscal measures alongside loose monetary policy, which cushioned the impact on the economy and enabled a faster recovery. The 2020 crisis, which was exacerbated by the COVID-19 pandemic, highlighted the need for swift and decisive policy action to protect public health and economic stability. Therefore, coordinated fiscal and monetary policy measures can help to maintain the resilience of the economy, even when faced with significant external shocks.

Recently, the fight against inflation has become a major concern on the national agenda. High inflation leads to distortions in the price level that severely affect macroeconomic balances. Therefore, measures to ensure price stability should be prioritized in order to reduce inflationary pressures. Measures to promote growth should also be considered when controlling inflation. The negative impact of inflation on economic growth highlights the importance of maintaining price stability. In combating inflation, achieving a "soft landing," i.e. maintaining economic growth without abrupt downturns, can be reconciled with growth targets.

To summarize, this paper shows the persistent adverse effects of the 2001, 2008 and 2020 crises on Türkiye's economic growth while identifying the role of various macroeconomic variables in shaping these outcomes. The findings indicate that non-interest public spending, investment and consumption are growth-promoting factors, while factors such as borrowing, tax burden, unemployment, high interest rates and inflation negatively impact economic growth. These analytical results underline the need for balanced policies that mitigate the adverse effects of economic crises and support sustainable growth, and provide valuable guidance to policy makers. Policymakers can be encouraged to carefully calibrate fiscal and monetary policies to maximize their growth-enhancing potential while minimizing their restrictive effects, thereby promoting a resilient and prosperous economy.

In conclusion, flexibility and adaptability in economic policy are likely to be crucial. Policy makers may need to consider fiscal and/or monetary policy measures tailored to the characteristics and conditions of the crisis at hand. Türkiye's experience can provide valuable lessons that may guide other developing countries facing similar challenges. As the global economy continues to evolve, the findings from this study may also be relevant for future policy design and effective management of economic crises.

REFERENCES

- Adıgüzel, M. (2020). Covid-19 pandemisinin Türkiye ekonomisine etkilerinin makroekonomik analizi. *İstanbul Ticaret Üniversitesi Sosyal Bilimler Dergisi*, 19(37), 191-221.
- Adrian, T. (2020). Monetary and financial stability during the coronavirus outbreak. *IMF Blog website: <https://blogs.imf.org/2020/03/11/monetary-and-financial-stability-during-the-coronavirus-outbreak/>* (Erişim Tarihi: 18.03. 2020).
- Agbonlahor, O. (2014). The impact of monetary policy on the economy of the United Kingdom: A Vector Error Correction Model (VECM). *European Scientific Journal*, 10(16), 19-42.
- Akalin, U. S., & Ünüvar, İ. (2020). Kamu harcamaları ve ekonomik krizler: Peacock ve Wiseman sıçrama tezi çerçevesinde Türkiye örneği. *Selçuk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, (43), 298-309.
- Aksoy, Ö. (2010). *1990 sonrası dönemde yaşanan finansal krizlerin Türkiye'nin makroekonomik dengeleri üzerindeki etkileri* (Master's thesis, Sakarya Üniversitesi (Türkiye)).
- Aksoy, Ş. (1991). *Kamu Maliyesi*. Filiz Kitabevi, İstanbul, ss.115
- Aktan, C. C., & Şen, H. (2001). Ekonomik kriz: Nedenler ve çözüm önerileri. *Yeni Türkiye Dergisi*, 2(42), 1.
- Allsopp, C., & Vines, D. (2005). The macroeconomic role of fiscal policy. *Oxford review of economic policy*, 21(4), 485-508.
- Altuntepe, N. (2011). Türkiye'de uygulanan para ve maliye politikalarının imalat sanayii üzerindeki etkileri: 1980-2009.
- Alzyadat, J. A. (2022). The Effectiveness of Fiscal and Monetary Policies: New Evidence from The Jordanian Economy Using ARDL Techniques. *RES MILITARIS*, 12(2), 7026-7040.
- Apte, A., Khawam, J., Regnier, E., & Simon, J. (2016). Complexity and self-sustainment in disaster response supply chains. *Decision Sciences*, 47(6), 998-1015.
- ARABACI, H., & Yücel, D. (2020). Pandeminin Türkiye ekonomisine etkileri ve Türkiye merkez bankası tarafından finansal istikrarı sağlamak amacıyla alınan önlemler. *Sosyal bilimler araştırma dergisi*, 9(2), 91-98.
- Archibald, G. C. (1969). The Phillips curve and the distribution of unemployment. *The American Economic Review*, 59(2), 124-134.
- ARISOY, A. G. İ. (2005). Wagner ve Keynes hipotezleri çerçevesinde Türkiye'de kamu harcamaları ve ekonomik büyüme ilişkisi. *Çukurova Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 14(2), 63-80.

- Arslan, A., Gökçe, E. C., & Ateş, M. S. (2020). Türkiye’de iktisadi krizlerin toplam vergi gelirleri üzerindeki etkisi. *Gaziantep University Journal of Social Sciences*, 19(2), 332-349.
- Auerbach, A. J., & Gale, W. G. (2010). *Activist fiscal policy to stabilize economic activity*. In R. W. Kolb (Ed.), *Lessons from the Financial Crisis* (pp. 727-737). John Wiley & Sons.
- Auerbach, A. J., & Gorodnichenko, Y. (2012). Measuring the output responses to fiscal policy. *American Economic Journal: Economic Policy*, 4(2), 1-27.
- Ay, H., & Uçar, Ö. (2015). Üç küresel ekonomik krizin analizi. *Dokuz Eylül Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 17(1), 11-32.
- AYDIN, Y., & Araman, S. (2018). Konjonktür ve kriz teorileri: Marx, Keynes ve Schumpeter. *Nişantaşı Üniversitesi Sosyal Bilimler Dergisi*, 6(1), 45-67.
- Balcı, Y., & Çetin, G. (2020). Covid-19 Pandemi Sürecinin Türkiye’de İstihdama Etkileri Ve Kamu Açısından Alınması Gereken Tedbirler. *İstanbul Ticaret Üniversitesi Sosyal Bilimler Dergisi*, 19(37), 40-58.
- Baldacci, E., Gupta, S., & Mulas-Granados, C. (2009). How effective is fiscal policy response in systemic banking crises?.
- Baldacci, E., Gupta, S., & Mulas-Granados, C. (2014). How effective is fiscal policy response in financial crises. *Financial Crises: Causes, Consequences, and Policy Responses*, 431-457.
- Baldwin, R. E., & Tomiura, E. (2020). Thinking ahead about the trade impact of COVID-19.
- Beck, T. (2020). Finance in the times of coronavirus. *Economics in the Time of COVID-19*, 73, 73-76.
- Benmelech, E., & Tzur-Ilan, N. (2020). *The determinants of fiscal and monetary policies during the COVID-19 crisis* (No. w27461). National Bureau of Economic Research.
- Benmelech, E., & Tzur-Ilan, N. (2020). *The determinants of fiscal and monetary policies during the COVID-19 crisis* (No. w27461). National Bureau of Economic Research.
- Bernanke, B. S., Boivin, J., & Elias, P. (2005). Measuring the effects of monetary policy: a factor-augmented vector autoregressive (FAVAR) approach. *The Quarterly journal of economics*, 120(1), 387-422.
- Bernanke, B. S., Gertler, M., & Gilchrist, S. (1999). The financial accelerator in a quantitative business cycle framework. *Handbook of macroeconomics*, 1, 1341-1393.
- Bernstein, M. A. (1987). *The Great Depression: delayed recovery and economic change in America, 1929-1939*. Cambridge University Press.
- Berument, H., & Dincer, N. N. (2008). Measuring the effects of monetary policy for Türkiye. *Journal of Economic Cooperation*, 29(1), 83-110.
- Besomi, D. (2005, December). Clément Juglar and the transition from crises theory to business cycle theories. In *a Conference on the Occasion of the Centenary of the Death of Clement Juglar. Paris* (Vol. 2).

- Bird, R. M., & Zolt, E. M. (2008). Tax policy in emerging countries. *Environment and Planning C: Government and policy*, 26(1), 73-86.
- Blinder, A. S. (1974). *The economics of public finance*. Atlantic Publishers & Distri.
- Blinder, A. S. (1981). Thoughts on the Laffer curve. In *The supply-side effects of economic policy* (pp. 81-92). Dordrecht: Springer Netherlands.
- Blinder, A. S., & Solow, R. M. (1973). Does fiscal policy matter?. *Journal of public economics*, 2(4), 319-337.
- Bloch, D., & Fall, F. (2015). Government debt indicators: understanding the data.
- Bordo, M. D., & Meissner, C. M. (2016). Fiscal and financial crises. In *Handbook of macroeconomics* (Vol. 2, pp. 355-412). Elsevier.
- Bouakez, H., Chihi, F., & Normandin, M. (2014). Measuring the effects of fiscal policy. *Journal of Economic Dynamics and Control*, 47, 123-151.
- Bouakez, H., Chihi, F., & Normandin, M. (2014). Measuring the effects of fiscal policy. *Journal of Economic Dynamics and Control*, 47, 123-151.
- Brahmbhatt, M., & Canuto, O. (2012). *Fiscal policy for growth and development* (pp. 1-22). World Bank, Washington, DC.
- Buchanan, J. M. (1960). The theory of public finance.
- Buchanan, J. M., & Roback, J. (1987). The incidence and effects of public debt in the absence of fiscal illusion. *Public Finance Quarterly*, 15(1), 5-25.
- Buchanan, J. M., & Tullock, G. (1965). *The calculus of consent: Logical foundations of constitutional democracy* (Vol. 100). University of Michigan press.
- Burns, A. F., & Mitchell, W. C. (1946). *Measuring business cycles*. National bureau of economic research.
- Canbazoğlu, S. (2010). Finansal gelişme ve ekonomik büyüme arasındaki nedensellik ilişkisi: Vektör hata düzeltme modeli (VECM) yaklaşımı ile Türkiye için bir uygulama [*The causal relationship between financial development and economic growth: An empirical investigation for Türkiye based on vector error correction modeling (VECM) approach*]. (Master thesis)
- Cantore, C., Levine, P., Melina, G., & Pearlman, J. (2019). Optimal fiscal and monetary policy, debt crisis, and management. *Macroeconomic Dynamics*, 23(3), 1166-1204.
- Carlson, K. M., & Spencer, R. W. (1975). Crowding out and its critics. *Federal Reserve Bank of St. Louis Review*, (December 1975).
- Castelnuovo, E., Nicoletti Altimari, S., & Rodriguez-Palenzuela, D. (2003). Definition of price stability, range and point inflation targets: The anchoring of long-term inflation expectations. *Range and Point Inflation Targets: The Anchoring of Long-Term Inflation Expectations* (September 2003).

- Çetin, A., & Çetin, B. (2007). Alternatif para politikası değişkenlerinde maliye politikası, döviz kuru ve enflasyonun büyüme üzerindeki etkisi. *Iktisat İşletme ve Finans*, 22(252), 123-134.
- Çetin, M. (2022). Para Politikası Uygulamalarının Ekonomik Büyüme Üzerindeki Uzun Dönem Etkisinin Vektör Otoregresif Modeli ile Analizi: 2006-2021 Dönemi Türkiye Örneği. *Bilge Uluslararası Sosyal Araştırmalar Dergisi*.
- Çoban, H., & Yeşil, E. (2022). The Effect of Inflation Targeting on Financial Discipline. *BİLTÜRK Journal of Economics and Related Studies*, 4(2), 59-76.
- Chugunov, I., Pasichnyi, M., Koroviy, V., Kaneva, T., & Nikitishin, A. (2021). Fiscal and monetary policy of economic development. *European Journal of Sustainable Development*, 10(1), 42-42.
- Clower, R., & Howitt, P. (1998). Keynes and the classics: an end of century view. *Keynes and the Classics Reconsidered*, 163-78.
- Cochrane, J. H. (1998). What do the VARs mean? Measuring the output effects of monetary policy. *Journal of monetary economics*, 41(2), 277-300.
- Cukierman, A. (2013). Monetary policy and institutions before, during, and after the global financial crisis. *Journal of Financial Stability*, 9(3), 373-384.
- Dabrowski, M. (2012). Fiscal and monetary policy determinants of the eurozone crisis and its resolution. *CASE Network Study & Analyses*, (443).
- Daniela, V. O. D. Ǻ., Gabriela, D. O. B. R. O. T. Ǻ., & Andreea, C. L. (2020). HETEROGENEITY OF FISCAL POLICIES. *Annals of the University of Oradea, Economic Science Series*, 29(2).
- Dao, M. Q. (2017). Determinants of the global financial crisis recovery: an empirical assessment. *Journal of Economic Studies*, 44(1), 36-46.
- DARICAN, M. F. (2013). Ekonomik krizler ve Türkiye. *İstanbul Aydın Üniversitesi Dergisi*, 5(17), 39-46.
- Davig, T., & Leeper, E. M. (2011). Monetary–fiscal policy interactions and fiscal stimulus. *European Economic Review*, 55(2), 211-227.
- Demid, E. (2018). Fiscal and monetary policy: coordination or conflict?. *International Economic Journal*, 32(4), 547-571.
- Diebold, F. X., & Rudebusch, G. D. (1994). Measuring business cycles: A modern perspective.
- Dileyici, D., & ÖZKIVRAK, Ö. (2010). Bütçe anlayışındaki değişim süreci: Denk bütçe ilkesinin erozyonu ve açık bütçe politikası. *Hukuk ve İktisat Araştırmaları Dergisi*, 2(1).
- Doğanlar, M., Harun, B. A. L., & Özmen, M. (2007). Döviz Krizi Modelleri. *Çukurova Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 16(1), 253-275.

- DOĞRU, B., & Demiröz, D. M. (2012). *Merkez Bankası Politikalarının Fiyat İstikrari Ve Diğer İktisadi Olgular Açısından Değerlendirilmesi Ve Türkiye’de Enflasyon Hedeflemesi Örneği*. University Library of Munich, Germany.
- Dosi, G., Fagiolo, G., Napoletano, M., Roventini, A., & Treibich, T. (2015). Fiscal and monetary policies in complex evolving economies. *Journal of Economic Dynamics and Control*, 52, 166-189.
- Dungey, M., & Fry, R. (2009). Identifying fiscal and monetary policy in a small open economy VAR. *Economic Modelling*, 26, 1147-1160.
- Edison, H., & Reinhart, C. M. (2001). Stopping hot money. *Journal of Development Economics*, 66(2), 533-553.
- Eichengreen, B. (2004). Financial instability. *Global crises, global solutions*, 251-80.
- Emirkadı, Ö. (2005). Gelişmekte olan ülkeler ve parasal kriz teorileri üzerine bazı değerlendirmeler. *Sosyoekonomi*, 2(2).
- ERÇEL, G. (1999). 2000 Yılı Enflasyonu Düşürme Programı, Kur ve Para Politikası Uygulaması, Para Programları. TCMB, <http://www.tcmb.gov.tr/yeni/evds/yayin/praraprog2/baskanmaty5.html>. (19.10. 2008).
- Erdal, A. (2011). *2008 küresel krizi ve Türkiye ekonomisine etkileri* (Master's thesis, Ufuk Üniversitesi).
- Eroğlu, N. (2015). TÜRKİYE'DE 1990'LI VE 2000'Lİ YILLARDA PARA POLİTİKALARI. *Marmara Üniversitesi İktisadi ve İdari Bilimler Dergisi*, 26(1), 23-42.
- Ertuğrul, C., Evren, İ., & Çolak, O. (2010). Küresel mali krizin Türkiye ekonomisine etkileri. *Journal of Management And Economics Research*, 8(13), 59-72.
- Evans, O., Adeniji, S., Nwaogwugwu, I., Kelikume, I., Dakare, O., & Oke, O. (2018). The relative effect of monetary and fiscal policy on economic development in Africa: a GMM approach to the St. Louis equation. *Business and Economic Quarterly*, 2(October), 3-23.
- Facchini, F. (2018). What are the determinants of public spending? An overview of the literature. *Atlantic Economic Journal*, 46(4), 419-439.
- Fedajev, A., Pantović, D., Milošević, I., Vesić, T., Jovanović, A., Radulescu, M., & Stefan, M. C. (2023). Evaluating the Outcomes of Monetary and Fiscal Policies in the EU in Times of Crisis: A PLS-SEM Approach. *Sustainability*, 15(11), 8466.
- Ferreiro, J., Gómez, C., & Serrano, F. (2013). Mistakes in the Fiscal Policy in Spain before the Crisis. *Panoeconomicus*, 60(5), 577-592.
- Fetai, B. (2013). The effectiveness of fiscal and monetary policy during the financial crisis. *Journal of Economics and Business*, 16(2), 3-66.
- Filizer, R. (2013). *Türkiyede neo-liberal dönüşüm: 24 Ocak 1980 istikrar programı kararları ve etkileri* (Master's thesis, Sosyal Bilimler Enstitüsü).
- Foley, D. K., Shell, K., & Sidrauski, M. (1969). Optimal fiscal and monetary policy and economic growth. *Journal of Political Economy*, 77(4, Part 2), 698-719.

- Fournier, J. M., & Fall, F. (2015). Limits to government debt sustainability.
- Fratzscher, M. (2003). On currency crises and contagion. *International Journal of Finance & Economics*, 8(2), 109-129.
- Friedman, M. (1982). Monetary policy: Theory and practice. *Journal of Money, Credit and Banking*, 14(1), 98-118.
- Friedman, M., & Schwartz, A. J. (1965). Money and business cycles. In *The state of monetary economics* (pp. 32-78). NBER.
- Göçer, İ. (2013). Küresel ekonomik krizin etkileri: Panel veri analizi. *Balıkesir Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 16(29), 163-188.
- Goldberg, J. E., Klee, E., Prescott, E. S., & Wood, P. R. (2020). Monetary policy strategies and tools: financial stability considerations.
- Gorton, G. B. (2008). *The panic of 2007* (No. w14358). National Bureau of Economic Research.
- Gorton, G. B. (2010). *Slapped by the invisible hand: The panic of 2007*. Oxford University Press.
- Greenlaw, D., Hamilton, J. D., Hooper, P., & Mishkin, F. S. (2013). *Crunch time: Fiscal crises and the role of monetary policy* (No. w19297). National Bureau of Economic Research.
- Greenspan, A. (1993). The Fed aims for price stability. *Challenge*, 36(5), 4-10.
- Greenspan, A. (2003). Opening remarks at “Monetary Policy Under Uncertainty”. In *at a symposium sponsored by the Federal Reserve Bank of Kansas City, Jackson Hole, Wyoming*.
- Gupta, P., Mishra, D., & Sahay, R. (2007). Behavior of output during currency crises. *Journal of international Economics*, 72(2), 428-450.
- Hadziahmetovic, A., Halebic, J., & Colakovic-Prguda, N. (2018). Economic crisis: Challenge for economic theory and policy. *Eurasian Journal of Economics and Finance*, 6(4), 48-55.
- Havi, E. D. K., & Enu, P. (2015). The effect of fiscal policy and monetary policy on Ghana’s economic growth: which policy is more potent?. *International Journal of Empirical Finance*, 61-75.
- Heckscher, E. F. (2013). *Mercantilism*. Routledge.
- Henrekson, M. (1990). The Peacock and Wiseman displacement effect: A reappraisal and a new test. *European Journal of Political Economy*, 6(2), 245-260.
- Hur, S. K. (2007). Measuring the effectiveness of fiscal policy in Korea. In *Fiscal Policy and Management in East Asia* (pp. 63-93). University of Chicago Press.
- Hüseyin, Ş., & Ayşe, K. A. Y. A. (2015). Ekonomik krizlerin değişmeyen imdatçısı: Maliye politikası. *Sosyoekonomi*, 23(23), 55-86.

- Hussain, M., & Niazi, M. K. (1992). Causality Tests and the Relative Effectiveness of Monetary and Fiscal Policies in Pakistan [with Comments]. *The Pakistan Development Review*, 31(4), 759-769.
- Hutchison, M. M., Noy, I., & Wang, L. (2010). Fiscal and monetary policies and the cost of sudden stops. *Journal of International Money and Finance*, 29(6), 973-987.
- Ibrahim, I., Kamaludin, K., & Sundarasan, S. (2020). COVID-19, government response, and market volatility: Evidence from the Asia-Pacific developed and developing markets. *Economies*, 8(4), 105.
- İŞİK, S., & Togay, S. (2002). Para krizi modellerinin eleştirisi ve uluslararası para sisteminin düzenlenmesine yönelik Keynesyen öneriler. *İktisat İşletme ve Finans*, 17(191), 31-53.
- Jahan, S., & Papageorgiou, C. (2014). What is monetarism. *Finance & Development*, 51(1), 38-39.
- Jawadi, F., Mallick, S. K., & Sousa, R. M. (2016). Fiscal and monetary policies in the BRICS: A panel VAR approach. *Economic Modelling*, 58, 535-542.
- Kallianiotis, I. N. (2015). Economic Crises and the Substitution of Fiscal Policy by Monetary Policy. *International Journal of Economics and Financial Issues*, 5(1), 44-68.
- Kaminsky, G. L., & Reinhart, C. M. (1999). The twin crises: the causes of banking and balance-of-payments problems. *American economic review*, 89(3), 473-500.
- Kantor, B. (1979). Rational expectations and economic thought. *Journal of Economic Literature*, 17(4), 1422-1441.
- KARABIYIK, İ., & Metin, U. Ç. A. R. (2010). Türkiye'de 1980 sonrası uygulanan IMF destekli istikrar programlarının ekonomik açıdan değerlendirilmesi. *Akademik İncelemeler Dergisi*, 5(2), 37-58.
- Karaca, O. (2017). TÜRKİYE'DE PARA VE MALİYE POLİTİKALARININ GÖRELİ ETKİNLİĞİ: VAR ANALİZİ. *Uluslararası Yönetim İktisat ve İşletme Dergisi*, 13(13), 227-240.
- Karagöz, K., & Keskin, R. (2016). Impact of fiscal policy on the macroeconomic aggregates in Türkiye: Evidence from BVAR model. *Procedia economics and finance*, 38, 408-420.
- Kaymak, M. (2010). 1873-1896 Krizi: Mit mi Gerçeklik mi?. *Ankara Üniversitesi SBF Dergisi*, 65(02), 165-194.
- Kejžar, K. Z., Velić, A., & Damijan, J. P. (2022). COVID-19, trade collapse and GVC linkages: European experience. *The World Economy*, 45(11), 3475-3506.
- Kibritçioğlu, A. (2010). Küresel Finans Krizinin Türkiye'ye Etkileri.
- Kliman, A. (2015). The Great Recession and Marx's crisis theory. *American Journal of Economics and Sociology*, 74(2), 236-277.
- Kol, E. N. (2012). *2001 güçlü ekonomiye geçiş programı ve istihdam üzerine etkileri* (Master's thesis, Sosyal Bilimler Enstitüsü).

- Küçüköğlü, S. (2021). COVID-19 PANDEMİ SÜRECİNİN KÜRESEL EKONOMİK GÖSTERGELERİ VE TÜRKİYE'DE BANKACILIK VE FİNANS SEKTÖRÜNE ETKİLERİ. *İstanbul Ticaret Üniversitesi Sosyal Bilimler Dergisi*, 20(42), 1269-1291.
- Kurz, H. D., & Salvadori, N. (1998). Understanding 'classical' economics. *Studies in long-period theory*.
- Kuznets, S. (1940). Schumpeter's business cycles. *The American Economic Review*, 30(2), 257-271.
- Lacalle, D. (2020). Monetary and fiscal policies in the COVID-19 crisis. Will they work. *Journal of Business Accounting and Finance Perspectives*, 2(3), 1.
- Laffer, A. B. (1981). Supply-side economics. *Financial Analysts Journal*, 37(5), 29-43.
- Lerner, A. P. (1943). Functional finance and the federal debt. *Social research*, 38-51.
- Lerner, A. P. (1944). Functional Finance. *The Economics of Control*, 302-22.
- Li, J. (2013). The effectiveness of fiscal and monetary policy responses to twin crises. *Applied Economics*, 45(27), 3904-3913.
- Llaudes, R. (2005). The Phillips curve and long-term unemployment. *Available at SSRN 648002*.
- Lucas, R. E. (1980). Methods and problems in business cycle theory. *Journal of Money, Credit and banking*, 12(4), 696-715.
- Lucas, R. E. (1995). Understanding business cycles. *Essential readings in economics*, 306-327.
- Lütkepohl, H. (2004). *Applied time series econometrics*. Cambridge University Press.
- Magazzino, C., Giolli, L., & Marco, M. E. L. E. (2015). Wagner's Law and Peacock and Wiseman's displacement effect in European Union countries: A panel data study. *International journal of economics and financial issues*, 5(3), 812-819.
- Mangir, F. (2006). FİNANSAL DEREGÜLASYONUN 1989–2001 TÜRKİYE EKONOMİSİ ÜZERİNE ETKİLERİ: KASIM 2000 VE ŞUBAT 2001 KRİZLERİ. *Selçuk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, (16), 459-472.
- Mankiw, N. G. Makroekonomi. *Elif Yayınevi*, 2010
- McCallum, B. T. (1980). Rational expectations and macroeconomic stabilization policy: an overview. *Journal of Money, Credit and Banking*, 12(4), 716-746.
- Medas, P., Poghosyan, T., Xu, Y., Farah-Yacoub, J., & Gerling, K. (2018). Fiscal crises. *Journal of International Money and Finance*, 88, 191-207.
- Meijdam, L., van de Ven, M., & Verbon, H. A. (1996). The dynamics of government debt. *European Journal of Political Economy*, 12(1), 67-90.
- Meissner, C. M., & Oomes, N. (2009). Why do countries peg the way they peg? The determinants of anchor currency choice. *Journal of International Money and Finance*, 28(3), 522-547.

- Mishkin, F. S. (2001). Monetary policy. *NBER Reporter Online*, (Winter 2001/02), 8-11.
- Mishkin, F. S. (2018). *The Economics of Money, Banking, and Financial Markets*. Pearson.
- Missale, A., & Giavazzi, F. (2019). "The Stability and Growth Pact: Crisis and Reform." *CESifo Forum*, 2019(1), 26-33.
- Monamodi, N. E. (2019). *The impact of fiscal and monetary policy on economic growth in the SACU member economies between 1980 and 2017: a panel ARDL approach* (Doctoral dissertation, North-West University (South Africa)).
- Musgrave, R. A. (1996). The role of the state in fiscal theory. *International Tax and Public Finance*, 3, 247-258.
- Musson, A. E. (1959). The great depression in Britain, 1873–1896: a reappraisal. *The Journal of Economic History*, 19(2), 199-228.
- Nidhiprabha, B. (2010). Effectiveness of Thailand's macroeconomic policy response to the global financial crisis. *ASEAN Economic Bulletin*, 121-135.
- Nordhaus, W. D., Schultze, C. L., & Fischer, S. (1994). Policy games: coordination and independence in monetary and fiscal policies. *Brookings papers on economic activity*, 1994(2), 139-216.
- Obstfeld, M. (1996). Models of currency crises with self-fulfilling features. *European economic review*, 40(3-5), 1037-1047.
- OECD (2020) World Economic Outlook, June, 2020
- Oktar, S., & Dalyanci, L. (2010). Finansal kriz teorileri ve Türkiye ekonomisinde 1990 sonrası finansal krizler. *Marmara Üniversitesi İktisadi ve İdari Bilimler Dergisi*, 29(2), 1-22.
- Özbek, S., & Uğur, B. (2022). Para ve maliye politikalarının göreceli etkinliği: Türkiye örneği. *Oltu Beşeri ve Sosyal Bilimler Fakültesi Dergisi*, 3(1), 15-20.
- ÖZÇELİK, Ö., & SUNAY, E. (2018). KONJONKTÜREL DALGALANMALARIN TARİHSEL GELİŞİMİ. *Süleyman Demirel Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi*, 23(Geybullu Ramazanoğlu Özel Sayısı), 845-865.
- Özer, M., & Karagöl, V. (2018). Relative effectiveness of monetary and fiscal policies on output growth in Türkiye: an ARDL bounds test approach.
- Ozili, P. K., & Arun, T. (2020). Economic Effects of Coronavirus Outbreak.
- Özyılmaz, A. (2016). Para ve maliye politikaları arasındaki koordinasyonun makroekonomik değişkenler üzerindeki etkinliği. *Balkan ve Yakın Doğu Sosyal Bilimler Dergisi*, 2(1), 28-34.
- Parker, J. A. (2011). On measuring the effects of fiscal policy in recessions. *Journal of Economic Literature*, 49(3), 703-718.
- Paternostro, S., Rajaram, A., & Tiongson, E. R. (2007). How does the composition of public spending matter?. *Oxford Development Studies*, 35(1), 47-82.

- Peacock, A. T., & Wiseman, J. (1961). Determinants of government expenditure. In *The growth of public expenditure in the United Kingdom* (pp. 12-34). Princeton University Press.
- Peacock, H. M. (1990). Wiseman's displacement effect: a reappraisal and a new test. *Eur J Polit Econ*, 6, 245-60.
- Perotti, R. (2005). Estimating the effects of fiscal policy in OECD countries. Available at SSRN 717561.
- Pesenti, P. A., & Tille, C. (2000). The economics of currency crises and contagion: an introduction. *Economic policy review*, 6(3).
- Pigou, A. C. (1927). *Industrial fluctuations*, Macmillan, London.
- Pigou, A. C. (1936). Mr. JM Keynes' General theory of employment, interest and money. *Economica*, 3(10), 115-132.
- Reis, R. (2022). Debt revenue and the sustainability of public debt. *Journal of Economic Perspectives*, 36(4), 103-124.
- Rocheteau, G., Wright, R., & Xiao, S. X. (2018). Open market operations. *Journal of Monetary Economics*, 98, 114-128.
- Romer, C. D., & Romer, D. H. (2010). The macroeconomic effects of tax changes: estimates based on a new measure of fiscal shocks. *American economic review*, 100(3), 763-801.
- Rosen, H. S. (1992). Public finance. In *The encyclopedia of public choice* (pp. 252-262). Boston, MA: Springer US.
- Rosenberg, H. (1943). Political and social consequences of the great depression of 1873-1896 in Central Europe. *The Economic History Review*, 13(1/2), 58-73.
- Rossi, B., & Zubairy, S. (2011). What is the importance of monetary and fiscal shocks in explaining US macroeconomic fluctuations?. *Journal of Money, Credit and Banking*, 43(6), 1247-1270.
- Sachs, J. D. (1989). Conditionality, debt relief, and the developing country debt crisis. In *Developing Country Debt and Economic Performance, Volume 1: The International Financial System* (pp. 255-296). University of Chicago Press.
- Salant, S. W., & Henderson, D. W. (1978). Market anticipations of government policies and the price of gold. *Journal of political economy*, 86(4), 627-648.
- Saqib, N., & Aggarwal, P. (2017). Impact of fiscal and monetary policy on economic growth in an emerging economy. *International Journal of Applied Business and Economic Research*, 15(4), 457-462.
- Schmitt-Grohé, S., & Uribe, M. (2005). Optimal fiscal and monetary policy in a medium-scale macroeconomic model. *NBER Macroeconomics Annual*, 20, 383-425.
- Schneider, M. (2001). Sismondi's Macroeconomic Model An Annotated Translation. *History of Economics Review*, 34(1), 182-199.
- Schumpeter, J. A. (1936). *The General Theory of Employment, Interest and Money*.

Schumpeter, J. A. (1939). Business cycles: a theoretical, historical and statistical analysis of the capitalist process.

Schwartz, A. J. (1994). Review of Milton Friedman and Anna J. Schwartz, A Monetary History of the United States, 1867–1960. *Journal of Monetary Economics*, 34(1), 5-16.

Selvigül, A. A. (2012). *Güçlü ekonomiye geçiş programı ve bankacılık sektörüne etkisi* (Master's thesis, Sosyal Bilimler Enstitüsü).

Şen, H., & Çalışkan, A. (2009). Mortgage Kaynaklı Küresel Kriz ve Türkiye Ekonomisine Muhtemel Yansımaları. *Kamu'da Sosyal Politika Dergisi*, 3(8), 11-18.

Şen, H., & Kaya, A. (2014). Crowding-out or crowding-in? Analyzing the effects of government spending on private investment in Türkiye. *Panoeconomicus*, 61(6), 631-651.

Şen, H., & Kaya, A. (2015). The relative effectiveness of Monetary and Fiscal Policies on growth: what does long-run SVAR model tell us?.

Senbet, D. (2011). The relative impact of fiscal versus monetary actions on output: A vector autoregressive (VAR) approach. *Business and Economics Journal*.

Sherlund, S. M. (2008). The past, present, and future of subprime mortgages.

Smith, J. (2020). Crowding out effect of government spending on private investment: A literature review. *Journal of Economic Studies*, 15(2), 123-140.

Spilimbergo, A., Symansky, S., Blanchard, O. J., & Cottarelli, C. (2009). Fiscal policy for the crisis. *Available at SSRN 1339442*.

Stiglitz, J. E. (1989). Markets, market failures, and development. *The American economic review*, 79(2), 197-203.

Stock, J. H., & Watson, M. W. (2011). *Ekonometriye giriş* (Bedriye Saraçoğlu, Çev.). Elif Yayınevi.

Svensson, L. E. (2010). Inflation targeting. In *Handbook of monetary economics* (Vol. 3, pp. 1237-1302). Elsevier.

Tanyeri, İ. (1998). KEYNES'İN İSTİHDAM VE ÜCRET ANALİZİ. *Hacettepe Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi*, 16(1-2), 29-46.

Taşar, M. O. (2010). "TÜRKİYE'NİN GÜÇLÜ EKONOMİYE GEÇİŞ PROGRAMI" VE MAKRO EKONOMİK ETKİLERİNİN ANALİZİ. *Niğde Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi*, 3(1), 76-97.

Temin, P. (1993). Transmission of the great depression. *Journal of Economic Perspectives*, 7(2), 87-102.

Temin, P. (2016). Great Depression. In *Banking Crises: Perspectives from The New Palgrave Dictionary* (pp. 144-153). London: Palgrave Macmillan UK.

Tobin, J. (1995). An overview of the general theory.

TUNCER, G., & AKINCI, A. (2018). Effectiveness of fiscal policy and monetary policy in Türkiye. *Dumlupınar Üniversitesi Sosyal Bilimler Dergisi*, (57), 120-128.

- Turan, T. (2008). Maliye politikası araçlarının ekonomik büyüme üzerindeki etkileri: Bir literatür incelemesi. *Sayıştay Dergisi*, (69), 17-35.
- Turhan, M. İ. (2001). *Finansal Krizler ve Reel Sektöre Etkileri: Türkiye Örneği* (Doctoral dissertation, Marmara Üniversitesi (Türkiye)).
- Uçkaç, A. (2010). Türkiye’de neoliberal ekonomi politikaları ve sosyo-ekonomik yansımaları. *Maliye Dergisi*, 158(1), 422-430.
- Umutlu, G., Alizadeh, N., & Erkılıç, A. Y. (2011). Maliye politikası araçlarından borçlanma ve vergilerin ekonomik büyümeye etkileri.
- Ünsal, M. E. (2020). Kamu harcamaları, kamu gelirleri ve kamu borçlarının ekonomik büyüme üzerindeki etkileri: OECD ülkeleri üzerine panel veri analizi. *Dumlupınar Üniversitesi Sosyal Bilimler Dergisi*, (64), 53-64.
- Van Aarle, B., Garretsen, H., & Gobbin, N. (2003). Monetary and fiscal policy transmission in the Euro-area: evidence from a structural VAR analysis. *Journal of Economics and Business*, 55(5-6), 609-638.
- Viner, J. (1927). Adam Smith and laissez faire. *Journal of political economy*, 35(2), 198-232.
- Von Hagen, J., & Mundschenk, S. (2002). *Fiscal and monetary policy coordination in EMU* (No. 70). Working Paper.
- Vorhies, F. (1989). Marx on money and crises. *Critical Review*, 3(3-4), 531-541.
- Ware, N. J. (1931). The Physiocrats: a study in economic rationalization. *The American Economic Review*, 607-619.
- Weiner, S. E. (1992). The changing role of reserve requirements in monetary policy. *Economic Review-Federal Reserve Bank of Kansas City*, 77, 45-45.
- Whitt Jr, J., & Joseph, A. (1996). The Mexican peso crisis.
- Yılmaz, Ö., Kiziltan, A., & Vedat, K. A. Y. A. (2005). İktisadi Kriz Kuramları, Finansal Küreselleşme ve Para Krizleri. *Erciyes Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi*, (24), 77-97.
- Zarnowitz, V. (1984). Recent work on business cycles in historical perspective: Review of theories and evidence.

APPENDIX 1: LITERATURE RESEARCH

Authors and countries subject to study	Subject and Period	Variables Used	Method	Results
Kremetzer (1992)	The impact of monetary and fiscal policy implemented in the USA between 1950 and 1991 on economic growth	Monetary policy; growth rate of the monetary base and 90-day treasury bill rate, fiscal policy; the change in total government expenditures as fraction of GNP and the government budget deficit as a fraction of GNP.	VAR model	Monetary policy is relatively more effective than fiscal policy.
Hussain and Niazi (1992)	The impact of monetary and fiscal policies implemented in Pakistan between 1971-1972 and 1989-1990 on nominal GNP	Monetary policy: The annual growth rate of money stock or Money supply, Fiscal Policy: The annual growth rates of GNP at current factor cost and total government expenditures	Granger and Sims causality tests	Monetary policy is relatively more effective than fiscal policy in influencing nominal GNP.

Altuntepe (2001)	The impact of the monetary and fiscal policy implemented in Türkiye between 2009:01 and 2019:10 on manufacturing industry employment	Monetary policy: M1 Money Supply, M2 Money Supply, Total Term Deposits Fiscal policy: Total Tax Revenues, Indirect and Direct Taxes	VAR model	It has been revealed that the effects of monetary policy variables on manufacturing industry employment differ according to the short and long term, and that only indirect taxes among the fiscal policy variables affect manufacturing industry employment.
Fedajev at all (2003)	The impact of monetary and fiscal policies implemented in the EU between 2007 and 2015 on economic development and employment	Monetary policy: nominal short term-interest rate, real short term-interest rate, money market rate Fiscal policy; individual income tax rate, corporate tax rate, total receipts from taxes and social(%gdp), total general government expenditure (%gdp), general government final consumption expenditure (%gdp)	Partial Least Squares Structural Equation Modeling (PLS-SEM)	It is concluded that monetary and fiscal policies should be better coordinated at the EU level in order to support the macroeconomic stability of the Union in times of crisis.

Aarle et al (2003)	Euro-area aggregate, Japan, the US and the individual EU countries (the 12 EMU countries plus Denmark, Sweden and the UK, Luxembourg has been excluded) for the period 1980:I-2001:IV	Real output, real government revenue, real government spending, short-term interest rates and prices.	Structural Vector Autoregressive (SVAR)	Common monetary policy and/or coordinated fiscal stabilization policies aimed at eliminating a demand or supply shock are limited in their impact on output and prices, and innovations in common monetary policy and/or fiscal policy instruments may lead to different adjustments in output, prices and fiscal balances across the EMU. suggests.
Dungey and Fry (2009)	New Zealand The impact of monetary and fiscal policy shocks implemented between 1983:q2 – 2006:q4 on the economy	Real government expenditure, real taxation revenue, real GNE, the ratio of sovereign issued debt to GDP, real GDP, inflation, the short term interest rate, and trade weighted exchange rate for the New Zealand dollar	Structural Vector Autoregressive (SVAR)	Monetary shocks applied to the economy are not more effective than fiscal shocks, therefore fiscal shocks are more effective in increasing economic growth.

Monamodi (2009)	The impact of fiscal and monetary policy on economic growth in Southern African Customs Union (SACU) member economies between 1980 and 2017	Fiscal policy: public expenditure and revenues Monetary policy: used real interest rate, inflation, official exchange rate and M2 money supply.	Panel Automatic Regression Distributed Delay (PARDL)	It has shown that fiscal and monetary policy significantly affects economic growth in SACU member economies in the long run.
Neat (2010)	Whether the monetary policy or the fiscal policy implemented in the years 1987: Q1-2007: Q3 was more effective on the Turkish economy	GDP, money supply (M2) and public expenditure monetary and fiscal policy variables	ARDL Analysis	It has been observed that fiscal policy, not monetary policy, is effective on the Turkish economy.

<p>Fragetta and Kirsanova (2010)</p>	<p>The impact of monetary and fiscal policy implemented in the United States, the United Kingdom and Sweden between 1992:3 and 2008:2 on the functioning of the economy</p>	<p>Real GDP, GDP deflator, nominal interest rate and public expenditure as a percentage of GDP</p>	<p>Bayesian model</p>	<p>For the United Kingdom and Sweden, the monetary and fiscal authorities acted in a non-cooperative manner under the Fiscal Leadership regime, while in the United States there was no clear evidence that the Fed explicitly took the fiscal stance into account when making decisions, instead the monetary and fiscal authorities in the United States acted in a strategic manner. They concluded that he acted in an inappropriate manner.</p>
<p>Hutchison at all (2010)</p>	<p>The impact of net capital inflows experienced between 1982 and 2003 in 77 developing and emerging market economies, and the impact of monetary and fiscal policies on output growth during financial crises.</p>	<p>Dollarization of liabilities per nominal GDP, index of degree of capital account openness, trade openness showing the sum of exports and imports as a percentage of GDP, binary indicator of banking crises, average of 3 years of pre-crisis inflation and index of actual exchange rate</p>	<p>Regression</p>	<p>There is no significant correlation between the costs of financial crises and the economic policies followed at that time.</p>

Nidhiprabha (2010)	Thailand's macroeconomic policy against the global financial crisis in 2009 - data from 2000 to 2009	The model consists of nine variables under three main headings: output, total demand components and policy instruments. GDP or output levels are approximated by the manufacturing production index. Total demand expenditure was represented by private consumption and private investment indices, exports and government expenditure. In addition to public expenditure, the model includes tax revenues, the key policy interest rate and the real effective exchange rate. Additionally, the business sentiment index was used in the VAR model to capture the impact of the changing business environment on the investment and consumption decisions of the private sector.	VAR analysis	Showed that fiscal policy is relatively less effective than monetary policy
Rossi and Zubairy (2011)	The impact of monetary and fiscal policy shocks implemented in the USA from 1954:q4 to 2006:q4 on macroeconomic fluctuations	Government spending, federal funds rate, and GDP	VAR analysis	Fiscal policy shocks are relatively more important in explaining mid-cycle fluctuations in output, while monetary policy shocks are relatively more important in explaining business cycle fluctuations.

Fetai (2013)	The impact of monetary and fiscal policy implemented during the financial crisis in 66 emerging and developing countries between 1980 and 2010 on economic growth	Real GDP growth rate Discount rate/International reserves Annual budget balance (% of GDP) trade openness inflation Capital account openness	Different OLS techniques with robust standard errors and GMM estimators	Fiscal policy is a more effective tool than monetary policy in dealing with financial crises in developing and emerging countries.
Kaya and Şen (2015)	The impact of monetary and fiscal policies implemented in the Turkish economy in the period 2001-2014 on growth	GDP growth rate, central government budget deficit, central government debt stock, real interest rate, inflation, real effective exchange rate, trade openness and net reserves	Structural Vector Autoregressive (SVAR)	Both policies significantly affect growth and, in particular, that they should be used jointly
Karaca (2017)	The effectiveness of monetary and fiscal policies in Türkiye in the period 2004:III-2017:I	Economic growth (Y), relative change in the CBRT's monetary policy rate as a monetary policy tool (M) and relative change in real non-interest expenditures as a fiscal policy tool (G)	VAR model	It is stated that both monetary policy and fiscal policy affect economic growth in Türkiye and both policies are affected by economic growth.
Saqib and Aggarwal (2017)	impact of fiscal and monetary policy on economic growth in Pakistan , 1984 to 2014	Intermediate supply of money and financial balance	Cointegration test	Pakistani policy makers should focus on monetary policy rather than fiscal policy to boost economic growth

Özer and Karagöl (2018)	The impact of fiscal and monetary policies implemented in Türkiye between 1998 and 2016 on growth	Real GDP Government consumption expenditure policy rate	ARDL Bounds test, Structural Break Unit Root Tests and Granger Causality Tests	The monetary policy variable creates only short-term effects on economic growth; It has been concluded that the fiscal policy variable is effective on economic growth in the long term.
Dao (2017)	The impact of factors contributing to the recovery from the crisis of national GDP growth of G7, Asia7 and Latin America7 countries affected by the 2008 global crisis	National GDP growth in percentage for the period 2010-2012; using inflation, annual inflation rate, GDP deflator; reserves, total reserves including gold; Current account balance, balance of payments; National GDP growth in percentage for the period 2005-2007; Financial assets as a percentage of GDP; Fiscal policy openness index; Percentage of total loans of non-performing loans; Change in the openness of trade policy; export product concentration; Export market concentration; Crude oil production per capita (barrels/day) and net exchange are the terms of trade.	Multivariate regression analysis .	Good macroeconomic fundamentals along with clearer fiscal policy, fiscal liberalization, fiscal depth, domestic performance and favorable global conditions have a linear impact on national GDP growth.

Akıncı and Tuncer (2018)	The effectiveness of the monetary and fiscal policy implemented in Türkiye between 2006 and 2016 on economic growth	GDP, Broadly Defined Money Supply (M2) and Public Expenditures	ARDL econometric analysis method	As a result of the effectiveness comparison of fiscal and monetary policies in Türkiye, it was concluded that monetary policy is more effective.
Benmelech and Ilan (2020)	The impact of the fiscal and monetary policies implemented by 85 countries during the Covid-19 epidemic on the economy	Fiscal Spending (exc. Government guarantees) to GDP Government guarantees (%GDP) Healthcare spending (%GDP%), Households spending (%GDP) Business spending (%GDP), monetary variables interest rate, Central bank guarantees (%GDP), Asset purchases (%GDP) Reserve requirements, Repo operations, Macprudential policy, Dividend distribution, Easing lending requirements	Panel data analysis	High-income countries have announced greater fiscal policies to mitigate the effects of the Covid-19 pandemic than low-income countries. It has also been determined that a country's credit rating is the most important determinant of its financial expenditures during the Covid-19 epidemic.
Özbek and Uğur (2022)	The relative effectiveness of monetary and fiscal policies implemented in the Turkish economy between 2004-2020	The dependent variable is the relative change in real gross domestic product (GDP), Relative change in monetary policy rate Fiscal policy, relative change in real non-interest budget expenditures	VAR model	In Türkiye, monetary policy is more effective than fiscal policy.

Alzyadat (2022)	The relative effectiveness of fiscal and monetary policies in Jordan's economic growth process, 1970 – 2020 period	Real GDP Fiscal policy Variables (government expenditures in terms of current and capital, tax revenues, government Revenues, or deficit/surplus in the public budget) Monetary policy variables (money supply, interest, banks credit, or private demand deposits)	ARDL analysis	It has been concluded that government expenditures have greater and faster results than monetary variables in increasing the stability of the Jordanian economy, and that increasing the money supply is effective on the growth of the Jordanian economy.
-----------------	--	--	---------------	--