

INFLATION AND OUTPUT TRADE- OFF IN TÜRKİYE

**DR. SABİHA OLTULULAR
PROF. DR. HARUN TERZİ**

EĞİTİM
yayınevi

INFLATION AND OUTPUT TRADE-OFF IN TÜRKİYE

Dr. Sabiha Oltulular, Prof. Dr. Harun Terzi

Yayınevi Grubu Genel Başkanı: Yusuf Ziya Aydođan (yza@egitimyayinevi.com)

Genel Yayın Yönetmeni: Yusuf Yavuz (yusufyavuz@egitimyayinevi.com)

Sayfa Tasarımı: Kübra Konca Nam

Kapak Tasarımı: Eğitim Yayınevi Grafik Birimi

T.C. Kültür ve Turizm Bakanlığı

Yayıncı Sertifika No: 76780

E-ISBN: 978-625-385-884-1

1. Baskı, Mart 2026

Kütüphane Kimlik Kartı

INFLATION AND OUTPUT TRADE-OFF IN TÜRKİYE

Dr. Sabiha Oltulular, Prof. Dr. Harun Terzi

VI+95 s., 135x215 mm

Kaynakça var, dizin yok.

E-ISBN: 978-625-385-884-1

Copyright © Bu kitabın Türkiye'deki her türlü yayın hakkı Eğitim Yayınevi'ne aittir. Bütün hakları saklıdır. Kitabın tamamı veya bir kısmı 5846 sayılı yasanın hükümlerine göre kitabı yayımlayan firmanın ve yazarlarının önceden izni olmadan elektronik/mekanik yolla, fotokopi yoluyla ya da herhangi bir kayıt sistemi ile çoğaltılamaz, yayımlanamaz.

EĞİTİM
yayınevi

Yayınevi Türkiye Ofis:

Konya: Eğitim Yayınevi Tic. Ltd. Şti., Fevzi Çakmak Mah. 10721 Sok. B Blok, No: 16/B, Safakent, Karatay, Konya, Türkiye

İstanbul: Salon Yayınları, Atakent mah. Yasemen sok. No: 4/B, Ümraniye, İstanbul, Türkiye

Santral: +90 332 351 92 85

Editör hatları: +90 533 151 50 42, +90 507 151 50 43

bilgi@egitimyayinevi.com

Yayınevi Amerika Ofis: New York: Egitim Publishing Group, Inc.

P.O. Box 768/Armonk, New York, 10504-0768, United States of America

americaoffice@egitimyayinevi.com

Lojistik ve Sevkiyat Merkezi: Kitapmatik Lojistik ve Sevkiyat Merkezi, Fevzi Çakmak Mah. 10721 Sok. B Blok, No: 16/B, Safakent, Karatay, Konya, Türkiye

İnternet Satış: www.kitapmatik.com.tr

Whatsapp hattı: +90 553 950 50 37

bilgi@kitapmatik.com.tr

Kitabevi Şubesi: Eğitim Kitabevi, Şükran mah. Rampalı 121, Meram, Konya, Türkiye

Whatsapp hattı: +90 501 651 92 85

bilgi@egitimkitabevi.com

EĞİTİM YAYINEVİ
GRUBU

EĞİTİM
yayınevi

SALON
yayınevi

Kitapmatik
yayınevi

kitapmatik
Pazarlama Kurumu

EĞİTİM
kitabevi

TABLE OF CONTENTS

Preface	V
1. Introduction.....	1
2. General Information on Inflation and Economic Growth....	3
2.1. Definition of Inflation	3
2.2. Defining Economic Growth.....	7
3. The Relationship Between Inflation and Growth in Economic Theory.....	9
3.1. Classical Approach.....	9
3.2. Keynesian Approach	10
3.3. Monetarist Approach	11
3.4. Neoclassical Theory	15
3.5. Post-Keynesian View	16
3.6. Rational Expectations Theory	16
4. Models Related to the Relationship Between Inflation and Growth	18
4.1. Phillips Curve	18
4.2. The Mundell-Tobin	19
5. Studies Examining the Relationship Between Economic Growth and Inflation	21
5.1. Studies Stating that Inflation Positively Affects Growth.....	21
5.2. Studies Arguing that Inflation Negatively Affects Growth.....	22
5.3. Studies Stating that There is No Relationship Between Inflation and Growth	45

6. The Course of Inflation and Economic Growth in the Turkish Economy During the Period 1924-2025.....	47
6.1. 1924-1929 Period.....	48
6.2. 1930-1939 Period.....	48
6.3. 1940-1949 Period.....	49
6.4. 1950-1959 Period.....	49
6.5. 1960-1969 Period.....	50
6.6. 1970-1979 Period.....	52
6.7. 1980-1989 Period.....	53
6.9. 2000-2004 Period.....	57
6.10. 2005-2025 Period.....	59
7. Conclusion and Recommendations.....	60
Reference.....	66
Appendices.....	82

Preface

Inflation, which began to show its negative impact in many countries, especially developed countries, after the First World War, made its impact felt in Türkiye between 1940 and 1943 (at an average of 60 %) but was not considered a significant problem in economic growth until 1971. Although programs aimed at reducing inflation after 1971 achieved short-term success in some periods, no permanent success was achieved in the long term. In some periods, inflation was at very high levels, even in the triple digits.

Türkiye has been experiencing high inflation since the 1970s, and inflation negatively affects all segments of the country. Although reducing high inflation was among the targets of many stabilization programs, it did not become a priority target until the 1980s. In some periods, as it was thought that some inflation should be endured to increase economic growth, the rise in inflation was tolerated. Another misconception is that the fight against inflation was not given due importance because it was thought that the rate of economic growth would slow down as a result of the programs implemented to reduce inflation. As a result of this misconception, price stability has not been achieved in the Turkish economy for approximately the last 25 years.

In this study, the course of inflation and economic growth in Türkiye over time, as well as the direction of this relationship, were analyzed in light of the views in the economic literature.

Additionally, the relationship between inflation and economic growth was examined through theories and economic schools.

I would like to express my gratitude to Prof. Dr. Harun Terzi for his interest, knowledge, and contributions, which went beyond advising me on my master's program amidst his demanding administrative and academic duties; he also guided me with his valuable insights and suggestions.

This study is based on my master's thesis entitled "Inflation and Output Trade-off in Türkiye: An Econometric Analysis" which I completed in 2005 under the supervision of Prof. Dr. Harun Terzi (Karadeniz Technical University, Institute of Social Sciences, Trabzon, Türkiye, 2005).

1. Introduction

The phenomenon of inflation came to the agenda more after the First World War and began to be seen in developed countries as well as developing countries. During the American Civil War, inflation occurred because of the excessive printing of money required to finance the war. In the 1920s, the highest inflation rate recorded in history (10%) was experienced in Germany. By 1972, cost-based inflation was effective in many countries as a result of the effects of the oil crisis and the increase in input prices. In the 1990s, the inflation rate exceeded 1000% in some countries, such as Poland, Brazil, Mexico, and Argentina. Today, inflation remains at high levels in many countries. Inflation not only causes injustice in income distribution and unemployment but also negatively affects economic growth.

Many studies conducted until the 1970s claimed that there was a positive relationship between inflation and growth; however, in the 1970s and 1980s, both empirical studies and country experiences supported the view that there was a negative relationship between inflation and growth and that inflation should be reduced to ensure stable growth performance. Although the relationship between inflation and growth remains controversial in the short term, many studies suggest that the relationship is negative in the long term.

Although studies in the literature examining the relationship between inflation and economic growth have argued that the relationship between inflation and economic growth is positive, the generally accepted view is that there is a negative

relationship between inflation and economic growth, and that inflation negatively affects economic growth. In addition to these views, there are also views that argue that there is no significant relationship between these variables. The relationship between inflation and growth should be evaluated in a stable price system and sustainable growth performance in the long term, rather than a short-term trade-off. It is extremely important to correctly define the inflation and growth trade-off in future policies.

The main goals of the government are to increase growth and employment, and those of the central bank are to ensure price stability. Considering that providing growth and employment and sustainable price stability are important, if both the central bank and the government act together in the fight against inflation, the goals of these two important institutions will be achieved.

Starting with its introduction, this book consists of seven chapters. The second chapter examines the definitions of inflation and economic growth. The third chapter examines the relationship between inflation and economic growth within the framework of economic schools. The fourth chapter presents a literature review on theories related to the relationship between inflation and economic growth, while the fifth chapter includes studies on this relationship. This chapter includes studies conducted on a country-by-country basis as well as studies focusing on a single country. It also summarizes the results of studies using data from both developed and developing countries. Chapter 6 examines the trajectory of the relationship between inflation and growth in the Turkish economy. The general evaluation, conclusions, and recommendations are discussed in the final chapter Chapter 7.

2. General Information on Inflation and Economic Growth

2.1. Definition of Inflation

Although it varies according to the macroeconomic structures of countries, inflation is perceived as a significant problem in many countries today. Inflation rates reach single digits in some countries and even exceed three digits in others. Many empirical studies generally agree that maintaining a low inflation rate is necessary to achieve high and sustainable growth performance. Although inflation has a long history, the attention it has received is not recent. Inflation entered the literature around the time of World War I. Classical economists played a significant role in neglecting inflation. This stemmed from their view of money as merely a tool for exchanging goods and their belief that it would not affect real macroeconomic variables. J. S. Mill referred to money as “the most unnecessary invention in the world”, while the Marginal Theory, Walras and Pareto equilibrium equations, which are fundamental theories of the Classical and Neoclassical approaches, are based on the neutrality of money. The Law of Markets (Say’s Law), which assumes that there is no supply-demand imbalance, has also been an obstacle to giving inflation the necessary importance.

Until the 1970s, inflation was not considered a serious problem; in fact, it was argued that a certain amount of inflation was necessary for growth to be achieved, and some studies even obtained empirical findings that inflation positively affected growth (such as the Phillips curve and the Mundell–Tobin effect). As a result of Keynesian policies that increased aggregate demand, inflation gradually increased, and even economists who initially did not perceive inflation as a serious problem began to consider its negative impact on growth.

The view that inflation positively affects growth has lost its influence over time, and the significant decreases in the growth rate during periods of high inflation have refuted this view. This has been supported. A consensus has begun to emerge that low and stable inflation is necessary to ensure sustainable growth performance.

In an environment where the inflation rate is high and volatile, the information transmission feature of relative price movements is weak, reducing the efficiency of the economy and negatively affecting economic growth (Friedman 1977). High inflation negatively affects income and resource distribution in the short term and growth along with other macroeconomic variables in the long term. Another negative effect of high inflation is that it reduces total factor productivity, thereby negatively affecting growth (De Gregorio, 1992).

An increase in the money supply (and, thus, inflation) reduces the real amount of money individuals hold. Because individuals' liquidity decreases, they spend more energy and time obtaining consumer goods, thus reducing the time and energy they dedicate to production activities. It has been argued that inflation negatively affects growth (Chang and Black, 2002).

It has been argued that inflation disrupts efficient income distribution and that certain effects occur in the economy in countries experiencing high inflation. Some empirical studies have indicated that welfare costs occur (Simonsen and Cysne, 1994; Eckstein and Leiderman, 1992).

High inflation leads to a decrease in savings, an increase in interest rates, and an increase in trade deficits due to unrealistic exchange rate adjustments, a decrease in the value of money, and a decrease in production capacity and, therefore, the growth rate, both directly and indirectly through the aforementioned

effects of inflation. During inflationary periods, the shift of savings towards high-interest instruments rather than investments reduces economic efficiency.

If the inflation rate can be achieved at an optimal level, a decrease in the inflation rate will eliminate price uncertainty and investment risk, and, most importantly, will lead to a decrease in real interest rates. With lower interest rates, investments can be realized, and it will also be effective in increasing consumer spending. However, past experiences show that the possibility of increased consumer spending causing inflation again should not be ignored. Instability in inflation levels should also not be overlooked. Türkiye has experienced high inflation for a long time, but the fact that the annual inflation rate does not exhibit excessive fluctuations has somewhat mitigated the destructive effects of high inflation. In a high but stable inflation environment, inflationary effects are relatively easier to perceive, and prices and wages in all kinds of business agreements can be indexed to the inflation rate without causing too much trouble (Paya, 2002).

Price stability can be defined as an inflation rate low enough to not prevent individuals from making both production and savings and investment decisions. Price stability is not only about achieving a low inflation rate but also about maintaining that low inflation rate. Within this definition, there has not been any period in the last 25 years in the Turkish economy where price stability has been achieved. Price instability is a state in which the general price level is constantly rising (inflation) as well as constantly falling (deflation). In price instability, both inflation and deflation cause a loss of production in the economy. During deflation, the general price level and growth follow a directly proportional trend. Because the decrease in prices will be faster than the decrease in production costs,

negative consequences can occur at the micro level. During deflation, investments will decrease, followed by a decrease in production, and as a result, the economy will be negatively affected by the deflationary process.

There can be many combinations of relationships between inflation and growth; inflation can occur even without growth, and conversely, inflation can be at high levels even without growth (Friedman, 1973). A very strong negative relationship has been found between the growth rate and the wholesale price index (WPI), and a very strong positive relationship with the consumer price index. This finding shows that an increase in production costs negatively affects growth, while an increase in consumption costs positively affects growth (İnsel, 2001).

Inflation can be defined in many different ways. Giersch defined inflation as a chain of events leading to excess demand in the following senses:

a) When the planned effective demand at given (or expected) prices is greater than the supply limited by given production possibilities (i.e., the cost value consisting of average cost, profit margin, and indirect taxes), i.e., there is a shortage of goods.

b) When the effective demand for labor and raw materials at given (or expected) prices exceeds the supply that does not expand in line with this demand, i.e., there is a factor shortage.

According to another definition, inflation is the rise in the general price level due to increases in the prices of some goods and services without offsetting decreases in the prices of other goods and services. According to another definition, inflation is the rise in the general price level due to increases in the prices of some goods and services without offsetting decreases in the prices of other goods and services (Paya, 2002).

Although such a definition is given, it is stated that it is not possible to consider every increase observed in the general price level as inflation, and according to the generally accepted approach, it is expressed as “a sustained and noticeable increase in the general price level”, in other words, “a sustained increase in the general price level resulting from an imbalance between aggregate demand and aggregate supply”.

Monetarists have stated that inflation occurs when the rate of increase in the money supply is greater than the rate of increase in production. Monetarists have stated that inflation occurs when the rate of increase in the money supply is greater than the rate of increase in production. Monetarists have argued that the cause of the increase in aggregate demand is the increase in the money supply, while Keynesians have argued that it is due to increases in government spending and income.

2.2. Defining Economic Growth

The growth rate, one of the macroeconomic variables showing the performance of an economy in both the short and long term, is an important indicator for a country’s economy. The growth rate can be defined as the increase in the capacity of the economy to produce goods and services. Growth; These are expressed as increases in real gross national product (RGNP) and/or real gross domestic product (RGDP). Real Gross National Product (RGNP) and Real Gross Domestic Product (RGDP) can be defined as follows: RGNP is the total value of final production in a given period (usually a year or a three-month period), and RGDP is the total value of final goods and services produced by factors of production within a country’s national borders in a given period.

Growth in Real Gross Domestic Product (RGDP) fundamentally depends on two factors. First, it is achieved by using available resources in the most efficient way. When

labor, capital, land, and entrepreneurship factors are used efficiently, real GDP will equal potential GDP. Fluctuations may occur between real GDP and potential GDP; these periodic but irregular fluctuations are called “cyclical” fluctuations. These are called “fluctuations”. When real GDP is greater than potential GDP, it can be said that resources in the economy are overused, and when it is smaller, it can be said that resources in the economy are underused. The period when real GDP falls (when the real GDP growth rate is negative) is called a recession, and the period when GDP increases is called an expansion period.

Second, growth can be achieved by increasing the efficiency or productivity of production factors. Considering that the main source of growth is an increase in productivity in the economy, productivity increases are extremely important for a country. Studies have shown that there is a negative relationship between inflation and productivity increases (Jarrett and Selody, 1982; Ram, 1984). It has been stated that it is possible to solve the inflation problem with a productivity increase. In addition, the use of resources in inefficient areas is an important factor in the chronicity of inflation. However, some studies have also concluded that there is no significant relationship between these two variables (Cameron, 1996).

Growth is expressed as an expansion in the production capacity of goods and services. It can be done. Analytically, growth is the shift of the long-run supply curve to the right. Those who argue that some sacrifice of growth can be made to reduce inflation in the short run maintain that serious anti-inflationary policies, supported by structural reforms, can stabilize the economy with a relatively low production cost (Dibooglu and Kibritçioğlu, 2001).

3. The Relationship Between Inflation and Growth in Economic Theory

3.1. Classical Approach

The classical and neoclassical approaches have explained monetary events within the framework of the quantity theory. The classics defined the quantity theory, the neoclassicists introduced new interpretations, and the monetarists reinterpreted it and used it in their monetary analyses. The quantity theory states that the general price level will change as a result of changes in the money supply and the velocity of money circulation.

Quantity theory: “Assuming other conditions remain constant, a change in the money supply will cause an equal change in the general price level” (Paya, 2002).

$$M \times V = P \times Y$$

Since the velocity of money and the output level are constant, it is argued that the price level is proportional to the money supply. The equation assumes that the velocity of money and the output level are constant. Since the velocity of money and the output level are constant, it is argued that the price level is proportional to the money supply. In the classical case, the supply curve is vertical, meaning that while the output level remains constant at full employment, changes in the price level are possible. In quantity theory, since the velocity of money is constant, it is stated that the main cause of fluctuations in GDP is the money supply, and that the money supply must be controlled to prevent fluctuations in GDP.

The Classics consider money to be neutral. Sidrauski (1967) stated that money is neutral and unbiased. The neutrality of money means that a change in monetary factors leads only to a change in the price level without changing real variables (such

as employment, production, real national income level). It can be defined as follows:

Sidrauski (1967), contradicting Tobin's findings, stated that in the long run, the capital-labor ratio (and therefore output) is determined by the time preference ratio, thus re-establishing the super-neutrality of money. Following the work of Tobin and Sidrauski, Stein (1970) contributed to this issue and stated that he was equidistant from these two different results.

The Real Bills doctrine assumes that bills of exchange, which have a real commercial character, will not be inflationary because they lead to a flow of money on one hand and a flow of goods on the other. In other words, it is argued that those who borrow to produce goods and services will repay their debts and reverse the monetary flow they caused once they have produced and earned money. It is claimed that monetary expansion in such a process will not be inflationary. This is called the law of reflux (Paya, 2002).

3.2. Keynesian Approach

It is stated that an expansion in demand will be permanent in the economy, prices and wages will change very slowly, and thus the inflationary effect of monetary expansion will occur after a certain period (prices will rise after a long time). During this process, production growth can occur along with high inflation. An increase in domestic prices has an effect that increases imports and decreases exports, negatively impacting the balance of payments. When the money supply increases, interest rates will fall, investments will increase, and national income will rise due to the multiplier effect; however, since lower interest rates cause capital outflows, the balance of payments will be negatively affected. Keynes argued that inflation could occur when demand pressure was present, that is, when the employment frontier was strained (Paya, 2001).

The Keynesian view states that inflation occurs independently of changes in the money supply and that inflationary effects cause the money supply to expand. Keynesians consider monetary expansion as a consequence rather than a cause. They also stated that money is biased in both the short and long term.

Keynesian economists link inflation to the conflict arising from income distribution, arguing that free markets cannot regulate this conflict within their own dynamics. In other words, they argue that monetary contraction will not eliminate income distribution conflict in the long term. Therefore, it is believed that inflation can only be prevented through measures such as income policies. Income policies, in this context, are direct interventions in prices and wages formed in the markets. It is clear that these interventions will have specific objectives, such as price stability (Paya, 2001).

3.3. Monetarist Approach

While Keynesians relegate money to a secondary role, monetarists prioritize it. Monetarists focus on inflation, arguing that the primary cause is the excessive and unnecessary increase in the money supply by governments.

The monetarist approach states that money is important in determining nominal GDP in both the short and long term. In their analyses, Keynesians use the equation $GDP = C + I + G + (X - M)$, while monetarists use the quantity theory. In the quantity theory, the $M.V$ part in the equation $M.V = P.Q$ is considered equal to $C + I + G + (X - M)$. They have shown that if the velocity of money (V) is stable, money (M) determines the level of nominal GDP.

Monetarists argue that money only affects real production for a short period, that this effect will be small, and that its main effect will be on the general price level. Monetarists have emphasized the importance of price stability in the economy.

They argue that inflation poses a threat to both growth and unemployment, but fundamentally to the entire economy. In their studies, monetarists have addressed high inflation, drawing on the experiences of countries like Germany and Brazil, which have experienced high inflation in the past.

Monetarists argue that the Phillips curve will be steep (vertical) in the long run and the aggregate supply curve will be steep (vertical) in the short run. They emphasize that while combating high inflation may lead to a certain level of unemployment, it is necessary to fight inflation despite the possibility of unemployment, stating that inflation can be more harmful than unemployment. The monetarist approach suggests that the fundamental cause of instability in an economy is irregular increases (fluctuations) in the money supply. In the monetarist approach, it is argued that the money supply is a determinant of changes in GDP in the short run and changes in the price level in the long run. It has been stated that if the money supply increases, the economy may first expand and then contract, and if the money supply decreases, the economy may first experience recession and then expansion.

Monetarists have argued that the money supply is largely determined by the central bank, and therefore the quantity of money is an exogenous variable determined by the central bank. They argue that markets have no effect on changing the money supply. According to Friedman, in the long run, monetary expansion does not eliminate unemployment and can even cause inflation.

Monetarists have reinterpreted the quantity theory of money but have also made some criticisms. They argued that the classical quantity theory of inflation was insufficient to explain inflation and that the velocity of money (V) in the quantity theory equation was not constant. Quantity theory has

evolved into modern quantity theory with the contributions of monetarists. Monetarists argue that fiscal policies are ineffective in stabilizing policies. They state that the effect of policies made with public spending and taxes on demand is temporary, that the economy can be stabilized by changing permanent income and consumption to influence demand, that monetary policy should be implemented to influence economic units, and that the most appropriate way to achieve price stability is through controlling money supply.

Friedman stated that there should be a legal regulation for increasing the money supply and that the annual increase rate could be between 3% and 5%, but that this is not a rule. Friedman stated that the most appropriate monetary aggregate for controlling money supply is M2 because M2 has a stronger relationship with the basic economic variables and that fluctuations in M2 would be less than fluctuations in other monetary aggregates. According to Friedman, by adopting a monetary policy that anticipates moderate growth in money supply, the monetary authority will avoid inflation and deflation. In another article, Friedman discussed the need for a consistent relationship between the rate of increase in money supply and the growth rate. Friedman argued that there is a close and regular relationship between money supply and national income and prices, and that for a stable price level, the money supply should be increased in parallel with the growth rate of total production in the economy (Friedman, 1975).

Monetarists have argued that a tight monetary policy should be implemented for a stable economy without inflation problems, claiming that inflationary expectations in the market are formed based on past experiences. According to the monetarist approach, as a result of an increase in the general price level, the real money supply will decrease. If the economy is initially in equilibrium, after the price increases,

the real money supply will be less than the real money demand. It has been stated that individuals' spending will decrease, reduced consumption spending will decrease imports, and with a decrease in consumption spending, the general price level will fall and exports will increase. Thus, the balance of payments improves.

Friedman stated that fiscal policies are not an effective tool in influencing prices and production and that existing economic problems, such as production inflation, can be solved with monetary policies. Friedman stated that "inflation is everywhere and always a monetary event". He noted that reducing inflation is difficult and that implementing stabilization policies could make the economy even more unstable. Monetarists state that the quantity of production (Q) is stable, as is the velocity of money circulation. They argue that producers would continue to produce at higher nominal prices and costs. In other words, any increase in nominal prices would not reduce production and, therefore, would not negatively affect growth.

Like Keynesian economists, monetarists oppose raising interest rates to reduce inflation. Monetarists state that interest rates are already high in an inflationary period and emphasize that if inflation is successfully combated, interest rates will fall spontaneously. At the same time, monetarists argued that inflation and money supply should be gradually reduced.

Friedman stated that the first effect of an increase in the growth rate of nominal income would be on production and then on prices. The price effect of nominal income is approximately It has been stated that the effect of the increase in the money supply on inflation will appear between 6-9 months and 12-18 months. In the short term (around five or ten months), changes in money supply primarily affect production, and after a period exceeding ten months, they affect prices (Aktan, 2000).

Keynesians argue that an expansionary policy will have an effect on production but little effect on the general price level. Monetarists argue that a shift in the aggregate demand curve to the right will lead to an increase in real production and the general price level, but the increase in the general price level will be greater than the increase in production. In short, it has been stated that an increase in the growth rate will be less than an increase in the inflation rate.

The monetarist approach argues that the neutrality of money can be ensured by indexing the expansion of money supply to the growth rate. It has been argued that the effects of changes in money differ in the short and long terms; in the short term, monetary policies and changes in the money supply have real effects, and in the long term, money is neutral, with a decrease in the money supply initially lowering the output level and later affecting prices.

The monetarist approach has been criticized for its focus solely on the money supply in explaining inflation and for the ineffectiveness of the measures it proposes against inflation in less developed countries. In the 1980s, the policies proposed by the monetarist approach were implemented in many countries, including Türkiye, on January 24, 1980.

3.4. Neoclassical Theory

In the neoclassical model, it is stated that if money and capital are complementary, there is a negative relationship between inflation and output levels; if money and capital are substitutes, there is a positive relationship between inflation and output levels. It is also stated that if other means of payment (such as credit cards and checks) can be used in place of money in the economy, inflation and output levels are independent of each other. In neoclassical growth models, Tobin (1965), who made significant contributions to the field of inflation and

output growth, stated that output levels would continuously rise with a continuously rising inflation rate, but that the effect of inflation on output growth would be temporary.

Khan (2002) evaluated the relationship between inflation and growth within the framework of neoclassical theory, arguing that the effect of inflation on output growth is negative. He emphasized that even with moderate inflation, the effect of inflation on growth is negative. Taylor stated that there is a trade-off between inflation and output in the short term, but that there is no such relationship in the long term. He noted that deviations from the inflation target and real potential GDP by governments or central banks could be adjusted in the short term through interest rates.

3.5. Post-Keynesian View

Post-Keynesians see inflation as “always and everywhere a sign of the struggle for income distribution”. They argue that stagflation, the most significant indicator of instability in recent years, cannot be prevented by classical monetary and fiscal policies. On the contrary, it is claimed that these policies will act as a growth hindrance in the long run. This is because when these policies are implemented, the growth rate slows down and unemployment increases. In other words, curbing aggregate demand will increase unemployment and slow the growth rate (Ulusoy, 1999). It is stated that income policies must be implemented alongside these policies.

3.6. Rational Expectations Theory

Although rational expectations theory developed from the monetarist view, it adopts the basic principles of classical economics. The word “expectation” was first mentioned in the cobweb theory, and Keynesian and monetarist views incorporated it. Individuals stated that they would have adaptive expectations regarding changes in the price level.

According to adaptive expectations theory, future price... The level is determined according to the price level in the previous period(s). For example, if the inflation rate was 30% in the previous year, individuals expect the inflation rate to be 30% in the current year. If the inflation rate increases (decreases) in the current year, individuals expect the inflation rate to increase (decrease) in the following year as well and adjust their behavior accordingly. Muth (1961) stated that economic units have rational expectations rather than adaptive expectations. Muth (1961) stated that economic units have rational expectations rather than adaptive expectations.

The government should determine the policies it will implement in advance such as tax and government spending policies, implement them steadily, and not change them unless necessary, and even if it has to change them, it should do so gradually. The government should determine the policies it will implement in advance (such as tax and government spending policies), implement them steadily, and not change them unless necessary, and even if it has to change them, it should do so gradually.

When the money supply increases, individuals will predict that this increase will raise the general price level and nominal interest rates after a period. Ultimately, it is stated that an increase in the money supply will not create a significant change in real national income and employment levels, but will only have an inflationary effect. Ultimately, it is stated that an increase in the money supply will not create a significant change in real national income and employment levels, but will only have an inflationary effect. Due to the rational nature of expectations, it is argued that the economic policies to be implemented will not have an effect on production, employment, and unemployment; therefore, monetary and fiscal policies will not be sufficient to combat inflation. It has been argued that fiscal policies

implemented in the economy will negatively affect production and employment in the long run because, in a situation where the economy is in equilibrium at the full employment income level, for example, an increase in government spending, if this increase is financed by borrowing from individuals, will be balanced by an increase in private consumption and investment spending, and will not cause a change in production and employment. If the increase is financed by taxes, aggregate supply will be negatively affected. In theory, it is stated that monetary and fiscal policies should not be resorted to unless necessary, and that monetary measures can be resorted to if necessary (Ulusoy, 1999).

Savings did not increase because of the attractiveness of interest rates; temporary and income-oriented savings turned into spending after a certain period. Savings did not increase due to the attractiveness of interest rates; temporary and income-oriented savings turned into spending after a certain period. Investment spending was negatively affected by high interest rates, and the lack of increase in investments caused the gap between supply and demand to widen and inflation to accelerate. The free and high interest rate policy implemented to curb demand and control inflation, considering the existence of rationally acting individuals as argued by rational expectations theory, will accelerate inflation as high interest rates do not break demand pressure. Developments in Türkiye after 1980 illustrate the rational expectations theory (Akdiş, 1992).

4. Models Related to the Relationship Between Inflation and Growth

4.1. Phillips Curve

The Phillips curve assumes that high inflation leads to a low unemployment rate, positively affecting growth (Grimes, 1991). The Phillips curve indicates that if higher inflation

is tolerated, the growth rate will be at a high level. In some empirical studies, it has been stated that an inverse relationship between inflation and the unemployment rate exists in some countries, and that this inverse relationship may be valid in the short term and only in the case of an unexpected increase in inflation. One of the most important criticisms of the negative relationship between inflation and growth in the Phillips curve was made by Lucas (1973) in his classic article. In his work, known in the literature as the Island model, he stated that inflation can only positively affect growth in countries where the price level follows a balanced (stable) course and the variability of demand-side policies is low. It was also noted that empirical studies covering both low and high inflation rates support this view.

It was also noted that empirical studies covering both low and high inflation rates support this view. They stated that this relationship might exist in the case of an unexpected price increase, but not in the case of expected inflation. They stated that this relationship might exist in the case of an unexpected price increase, but not in the case of expected inflation.

4.2. The Mundell-Tobin

The effect posits that the motivation to save money and the tendency to invest in portfolios for capital accumulation are alternatives. The Mundell-Tobin effect posits that the motivation to save money and the tendency to invest in portfolios for capital accumulation are alternatives. As inflation increases, investors assume that the cost of saving money will rise, thus abandoning the motivation to save and shifting towards portfolio investments aimed at capital accumulation. This model suggests that increased capital accumulation coupled with rising inflation will have a positive impact on growth. In short, this indicates a positive relationship between inflation

and growth. Increased inflation reduces individuals' wealth; therefore, to reach the pre-inflationary wealth equilibrium, individuals reduce their propensity to save, leading to lower interest rates and increased investment (Mundell, 1963). Mundell (1963) stated that as the inflation rate increases, the welfare of individuals decreases, and those who do not want their welfare to decrease will save more, thus lowering real interest rates. He argued that increased savings increase capital accumulation, thus accelerating output growth.

Tobin (1965) suggests that inflation will cause individuals to substitute money with interest-bearing assets, leading to higher capital intensity and increased growth. Tobin (1965) rejects the idea of a relationship between higher growth rates and higher inflation rates, and the notion that money is super-neutral. By constructing a model based on current income and total savings, he argued that monetary shocks, an increase in the growth rate, and a higher inflation rate reduce the return on money, leading to a shift in portfolios favoring some investors. In such a case, the capital stock increases, leading to a more stable output level. Considering that countries' domestic savings consist of voluntary and compulsory savings, compulsory savings are referred to as an inflation tax. However, since voluntary savings decrease despite an increase in mandatory savings in the economy, the net effect of savings is a decrease. In countries lacking fiscal depth, the government can generate revenue through an inflation tax using the resources of the central bank. If the government uses the revenue obtained for investment expenditures, inflation can be effective in increasing growth; inflation can positively affect growth through savings. The views regarding the positive effect of inflation on growth are based on the view that inflation increases mandatory savings (Bruno and Easterly, 1995).

5. Studies Examining the Relationship Between Economic Growth and Inflation

In the literature, there are views that argue that there is a relationship between inflation and economic growth, as well as views that argue that there is no relationship. In the relationship between inflation and economic growth, there are those who argue that inflation positively affects economic growth, even in the short term, as well as those who argue that this relationship is negative. A significant debate in recent years regarding the relationship between inflation and economic growth concerns whether the relationship between the variables is linear. A significant portion of empirical studies argues that the relationship between these variables is not linear.

5.1. Studies Stating that Inflation Positively Affects Growth

Fischer (1979) stated that there is a positive relationship between inflation and investment in the short term. Fischer also stated that there is a negative relationship between inflation and consumption, thus indicating that inflation has no effect on growth. Levine and Zervos (1993) examined the relationship between inflation and growth, stating that inflation negatively affects growth only when the inflation rate is above 80%, and that at a moderate inflation rate, inflation positively affects growth.

Gomme (1993), examining inflation and production levels in the endogenous growth structure, stated that the effect of inflation on growth may be small. In his study with similar economies, he emphasized that deviations (decreases) in employment may occur as a result of rising inflation rates. Gomme examined the sustained effect of changes in the inflation rate and estimated that a moderate inflation rate (such as 10%) might contribute very little (less than 0.01%) to the growth rate.

Mallik and Chowdhury (2001) examined the relationship between inflation and growth for four South Asian countries using time series data. For the four South Asian countries, Bangladesh (1974-1997), India (1961-1997), Pakistan (1957-1997) and Sri Lanka (1966-1997), the consumer price index (CPI) was used as the inflation rate and the logarithm of the gross domestic product (GDP) was used for growth. In the analyses, they used Dickey-Fuller (DF) and Phillips-Perron (PP) tests for unit root tests, and the Johansen-Juselius method and error correction model (ECM) for cointegration tests. It has been argued that, with the exception of Bangladesh (1972-1974), none of the four countries included in the model experienced a high inflation crisis, that these countries had moderate inflation, and that their economic structures were similar. In this study, which examines the elasticity of growth with respect to inflation and the elasticity of inflation with respect to growth, it is suggested that the inflation rate is more sensitive to changes in the growth rate, meaning that changes in inflation affect growth more significantly, and that there is a bidirectional and positive relationship between growth and inflation in the long term. The findings emphasize that inflation is not harmful to growth, but that rapid growth is likely to create inflationary pressure. Mallik and Chowdhury state that a rapid growth rate can accelerate inflation, resulting in reduced growth. Fischer, Sahay, and Vegh (2002) noted that countries experiencing high inflation have low growth rates in the medium and long terms. They stated that in transition economies, when the inflation rate is around 50%, sharp effects emerge in the economics.

5.2. Studies Arguing that Inflation Negatively Affects Growth

The views of structuralists and monetarists on the effect of inflation on economic growth differ significantly. Structuralists argue that inflation is necessary for growth, whereas monetarists

view it as harmful to the growth process. Stockman (1981) states that as the inflation rate increases, there is a decrease in the level of production and the welfare of individuals. In his research, he considers money as a complement to capital. He states that the relationship between inflation and the level of production is negative. Consequently, the Stockman effect argues that there is an inverse relationship between the inflation rate and production.

Fischer (1981) estimated that growth would decrease by 0.3% if the inflation rate increased from zero to 10%. Eckstein and Leiderman (1992) stated that a 10% increase in inflation could lead to a 1% loss of welfare in GDP. Clark (1982), who examined the relationship between inflation and productivity growth for the US economy during the period 1947-1981, argued that inflation would increase producers' costs, leading to both a decrease in production and an erosion of taxes, and that as a result of these negative developments, investments and productivity would be negatively affected.

Fischer (1983), who examined the relationship between inflation and growth using cross-sectional data for 53 countries between 1961 and 1973 and 1973 and 1981, emphasized that the relationship between growth and inflation was negative, but that the effect of inflation on growth was positive in lagged inflation values, and that the R² of the models was high along with the statistically significant lagged coefficients.

Ram (1984), examining the relationship between inflation and productivity growth for the U.S. economy during 1953–1982, stated that there is causality from inflation to productivity growth, but this relationship is not statistically significant. Edwards (1984), examining the relationship between inflation and growth for 135 countries during the 1950–1990 period within the framework of the Mundell–Tobin hypothesis, also included

investments in the model when examining the relationship between inflation and growth. He stated that in countries where the inflation rate is below 20%, there is a negative correlation between growth, investments, and inflation.

Kormendi and Meguire (1985), examining the relationship between inflation and growth using cross-sectional data from 47 countries during the 1950–1977 period, stated that the effect of inflation on growth is negative and significant. Fischer (1993), in the equation he estimated using cross-sectional data, stated that if inflation rises from 5% to 50%, growth decreases by 1.8%. In the model created with cross-sectional data, it was stated that when inflation is below approximately 9%, this relationship is positive and statistically significant, but the relationship is not linear. In the model created with panel data, it was stated that there is a non-linear and positive relationship when the inflation rate is around 6%. It was stated that there is a positive correlation between inflation and investment when the inflation rate is between 3.4% and 7.3%. Consequently, it was stated that the Mundell–Tobin hypothesis can only be valid at low inflation rates.

Cukierman and Meltzer (1986) examined the relationship between inflation and inflation uncertainty. It was stated that there is a positive relationship between inflation and inflation uncertainty. Similarly, Ball (1992), Caporale and McKiernan (1997), Grier and Perry (1998, 2000) stated that there is a positive relationship between inflation and the variance of inflation. Tommassi (1994) and Grier and Perry (2000) stated that there is a negative relationship between inflation uncertainty and growth in the level of output, while Dotsey and Sarte (2000) stated that this relationship is positive.

Ball, Mankiw, and Romer (1988) state that there is a trade-off between inflation and output within the framework

of the new Keynesian model, and that high inflation reduces the degree of nominal wage rigidity, thus making the short-run Phillips curve steeper. Grier and Tullock (1989), who examined the relationship between growth and inflation variability for OECD countries, state that there is a negative and statistically significant relationship between growth and inflation variability.

Selody (1990) examined the relationship between inflation, growth, and productivity in the US and Canadian economies. Selody estimated that the predicted results for the U.S. and Canadian economies were similar, with a 1% increase in the inflation rate reducing worker productivity by 0.1%–0.2%. Fischer (1991) stated that the average inflation rate in countries with low growth is above 30%, and that the average inflation rate in countries with high growth is above 30%. He stated that it was 12%.

Cozier and Selody (1992) stated that the effect of inflation on production was negative for 20 OECD countries and that a 1% increase in inflation reduced productivity by 0.14%. Jarett and Selody (1990), inflation rate in Canada during 1963-1979. They stated that a 1% increase reduces the production increase by 0.3%. Bali (1992) provided a theoretical explanation of the relationship between inflation and growth and stated that the central banks of countries experiencing high inflation can give up the low inflation target because the policies they implement to reduce the inflation rate may lead to a lower growth rate and higher unemployment rate. Therefore, he argued that in case of high inflation, the response of central banks to inflation becomes less clear, and high inflation will create uncertainty because policies will be uncertain as a result of the change.

De Gregorio (1992) examined the relationship between inflation and growth with a panel data set for the period 1950-1985 for 12 Latin American countries and found that, while

other factors were constant, inflation. He claimed that with an increase from 5% to 50%, the growth rate decreased by 0.7%. In another study, De Gregorio (1993) stated that there is a negative relationship between inflation and growth in Latin American countries. The relationship between inflation and growth is negative and inflation in the USA

Smyth (1992), who claimed that a 1% increase in inflation reduces annual growth by 0.22%, stated in another study conducted in 1994 that a 1% increase in inflation reduces annual growth by 0.16%. In his study examining Germany, Smyth stated that a 10% increase in the inflation rate reduced growth by 0.025%. Smyth reported in 1995 that there was a negative relationship between productivity growth and inflation for Germany between 1951 and 1991, and that inflation. He estimated that a 1% increase reduces productivity by 0.25%.

Ball (1993), who examined the relationship between inflation and growth in OECD countries with moderate inflation with both annual and quarterly data, included nine countries and 28 cases in quarterly data and 19 countries and 65 cases in annual data. He chose the consumer price index as the inflation rate and a suitable variable from gross domestic product or gross national product (GNP) rates as the growth rate. He developed a simple model to estimate the sacrifice ratio for each case, defined as the ratio of the total loss in production to the change in the inflation rate (total production loss/inflation), and used the standard filter and Hodrick-Prescott filter methods. He emphasized that the rate of sacrifice may decrease with the acceleration of the sudden and severe disinflation of inflation. However, he stated that if wage adjustments are flexible, this rate is decreasing and it will be less costly to reduce inflation with shock policies (cold Türkiye) instead of reducing it gradually.

With annual data, the estimated sacrifice rate for countries such as France, Germany, Italy, Japan, England and the USA is 0.9%, 10.1%, 5.9%, -0.9%, 2.7% for these countries, respectively 9.2% were estimated as 3%, 11.7%, 7%, 3.7%, 3.1% and 9.6%, respectively, in quarterly data, but it was stated that the results of the two data sets were quite different. It was emphasized that in the simple regression estimated with quarterly data, the inflation coefficient was negative and statistically significant, and that this result was in line with theoretical expectations. It was stated that the inflation coefficient was positive in the regression estimated with annual data.

Stating that there is a negative relationship between inflation and growth in OECD countries, Fischer (1993) argued that the breaking points of the inflation rate in developed and developing countries are 15% and 40%, respectively, that inflation above these rates negatively affects growth, and in his study in which Türkiye was also included in the analysis in the 1978 and 1980 periods, he claimed that the direction of causality was from inflation to growth. Fischer, who added uncertain inflation to the analysis while examining the relationship between inflation and growth, stated that in the growth regression in both cross-sectional and panel data, the coefficients of inflation and uncertain inflation variables are negative and growth tends to decrease in periods when inflation increases.

Koray (1993), who estimated the relationship between inflation and growth for the Turkish economy using the VAR method, tested the relationship between inflation and growth with the Lucas hypothesis for the period 1953-1969 and stated that inflation negatively affects the efficiency of the economy. Motley (1993) estimated the relationship between inflation and growth for 78 countries using cross-sectional data by dividing the period 1960-1988 into four separate seven-year periods. The relationship between these two variables was carried out

with long-term analysis. In the long term, he estimated that in OECD countries, if the inflation rate is reduced from 5% to zero, the per capita gross national product (GNP) can rise from 1% to 3%, otherwise the effect of inflation on growth will be negative in the long term.

Motley (1993), in his study, argued that the simple correlation estimated for 59 countries between 1960 and 1988 was significant and that inflation negatively affected growth (-0.31). He stated that rising prices would cause both a loss of welfare and a decrease in the growth rate in the economy, but that achieving price stability in the long run would be beneficial for the economy. He also stated that inflation and growth could move in the same direction in the short term due to the effect of demand-side shocks; in short, that rising inflation would increase the growth rate (GDP) in the short term, but that inflation would have a negative impact on growth in the long term. Simonsen and Cysne (1994) stated that if the inflation rate were 10%, the welfare cost in the economy could reach 4.25% of GDP. Dotsey and Sarte (2000) estimated that if the money supply is chosen as the monetary base, a welfare cost of 0.92% occurs in the economy when the inflation rate is 10%, and if the money supply is chosen as MI, the welfare cost of inflation will rise to 1.7%.

Fischer (1994) determined the moderate inflation rate to be between 1% and 3% and stated that even with moderate inflation, inflation would negatively affect growth and that he viewed the trade-off of the Phillips curve with skepticism at low inflation rates. Bruno and Easterly (1995), who examined the relationship between inflation and growth for 127 countries during the period 1960-1992, stated that when annual inflation is between 5% and 15%, the growth rate can be positively affected, while if the annual inflation rate is above 40%, growth will be negatively affected by inflation. Barro (1995), in his

study covering 100 countries from 1960 to 1990, examined the relationship between inflation and growth using a dataset of annual figures, selecting the consumer price index and gross domestic product variables. The average and median inflation rates of the countries were calculated for the periods 1960-1970, 1970-1980, and 1980-1990. He conducted his analysis by considering the inflation rates that exceeded 40% (1965-1975, 1975-1985, and 1985-1990). In 44 observations covering the period when inflation was high in Türkiye (above 40%) (1985-1990), it was stated that inflation rates were above 20%, and it was found that a 1% increase in the average annual inflation reduced GDP per capita by 2% to 3% annually, and also reduced the share of investments in GDP by 4%-6%. It was estimated that if the average inflation rate increases by 10% in the long term, GDP will decrease by 4%-7% after 30 years..

Judson and Orphanides (1996), who defined the relationship between inflation and growth as negative, stated that this negative relationship only occurs after a certain threshold. Estimating this threshold as 10%, the researchers stated that the effect of inflation could vary depending on whether the initial level of inflation was high or low. In another study, Barro (1996) stated that when the inflation rate is above 15% annually, growth is negatively affected. Bruno and Easterly (1996) stated that when inflation follows a stable course, growth can occur in the short term, but if inflation is high, growth will be negatively affected, even in the short term. However, they emphasized that there is no relationship between inflation and growth if the annual inflation rate is below 40%. They stated that the results are more consistent with neoclassical models than endogenous growth models, and that inflation, which affects both production and growth, has a greater impact on the quantity of production (GNP).

Sarel (1996), in his study covering 87 countries from 1970 to 1990, examined the relationship between inflation and growth using a panel dataset with gross domestic product, consumer price index, terms of trade, real exchange rate, government expenditures, and investment variables. In this study, where the terms of trade dataset were added to the model to address the negative correlation between inflation and growth caused by external supply shocks, the aim was to examine the relationship between domestic inflation and growth using terms of trade. In this examination, it was stated that the relationship between inflation and growth is not linear and that there are significant structural breaks in the inflation-growth relationship. It was stated that if this structural break is ignored, the relationship between inflation and growth may appear higher than it actually is. It was stated that a structural break occurs when the annual inflation rate is 8%. The value at which inflation affects growth (threshold value) was estimated as 8%, and it was stated that when the inflation rate is below 8%, inflation has no effect on growth, but when the inflation rate is above 8%, the effect of inflation on growth is significantly negative.

Empirical results show that a doubling of a moderate inflation rate (from 20% to 40%) reduces the growth rate by 1.7%. Unlike previous studies, this rate is higher, indicating that the negative impact of inflation on growth is greater than in previous studies. Highlighting the importance of political stability in the relationship between inflation and growth, Davis and Kanago (1996) argued that inflation negatively affects growth and that political stability is necessary for both low inflation and high growth to coexist.

Paul, Kearney, and Chowdhury (1997), examining the relationship between inflation and growth for Pakistan, India, and Sri Lanka, suggested that the relationship between inflation and growth was negative only for Pakistan, but unrelated for

India and Sri Lanka. Chowdhury (1997), in his study covering 70 countries from 1960 to 1989, examined the relationship between inflation and growth, selecting 48 of these countries from developed nations for his analysis. He stated that he found no relationship between growth and inflation in 40% of the countries and that only 20% of the countries showed a bidirectional or unidirectional causality.

Haslag (1997), while examining the relationship between inflation and growth in the period 1965–1990, also touched upon the welfare cost and conducted his analysis within the framework of neoclassical growth models. In the model, which used the average of real per capita gross domestic product and inflation rate in 82 countries, he stated that this relationship was negative. He indicated that in countries where the inflation rate was above 10%, there was a negative relationship between inflation and growth, while in countries where the inflation rate was below 10%, there was no significant relationship between these two variables. Andres and Hemando (1997), in their study covering data from countries with high inflation, found that the effect of inflation on growth was negative and significant. They estimated that the relationship between inflation and growth was not linear, and that a 1% decrease in inflation could lead to a 0.5%–2.5% increase in production.

Agenor and Hoffmaister (1997) found that monetary shocks had a short-term expansionary effect on production. They noted that the inflationary response to a shock in the money supply initially decreased and then increased, and that this effect continued with a steady trend, although the response was statistically significant. However, the production response to a shock in the money supply was not statistically significant. The results show that production is affected by supply shocks, inflation by real demand and monetary shocks, and that inflation does not tend to decrease in the long run after a monetary shock,

i.e., inflation exhibits inertia. It is emphasized that a significant part of inflation is demand-driven core inflation. It is stated that inflation is demand-driven and that supply-side factors have insignificant effects on inflation. These results are consistent with the study by Kibritcioğlu and Kibritcioğlu (1999), while differing from the study by Öniş and Özmucur (1990). In this study, 58.5% of the inflation variance is explained by monetary shocks and 17% by real demand shocks. Production is affected by supply-side shocks in the long run. It is also stated that aggregate demand has a small expansionary effect on production, but makes a significant contribution to the volatility of production. Furthermore, it is stated that capital mobility has no effect on production in the long run. The main reasons for aggregate demand effects are stated as high public sector deficits and devaluation. In their study covering 31 countries (41 of which experienced a high inflation crisis) from 1961 to 1994, Bruno and Easterly (1998) examined the relationship between inflation and growth using cross-sectional data. They defined a high inflation crisis as being above 40% (threshold) and conducted their analysis around this rate.

It was stated that there is no strong evidence of a strong relationship between inflation and growth outside of a high inflation crisis, but there is strong evidence that inflation negatively affects growth during a high inflation crisis. It was noted that during a high inflation crisis, sharp declines in the growth rate occurred, and after the high inflation crisis, when the inflation rate returned to its previous level, improvements in growth rates and stability in both the exchange rate and the monetary base were observed.

In models covering the period 1961-1994, researchers who defined moderate inflation between 20% and 40% stated that sharp declines in growth can be observed at both high and moderate inflation rates, and that increases in the growth rate

can occur with a decrease in the inflation rate. In the analysis, which also includes Türkiye for the periods 1960-1994, 1977-1980, and 1984-1994, it was stated that the average inflation rate was 61% and the per capita growth rate was -0.5% in the 1977-1980 period, while the average inflation rate was 63% and the per capita growth rate was 2.3% in the 1984-1994 period.

Hondroyiannis and Papapetrou (1998) examined the relationship between inflation and productivity variables affecting production in 8 OECD countries with low inflation in the 1960-1995 period using the Granger causality test and the VAR method. To examine the unit root of the series, they used DF, PP, and KPSS tests, unlike other studies. It was stated that there is a unidirectional causality in the Granger causality test, and in the error correction model, the direction of this causality is from inflation to productivity growth.

Ghosh and Phillips (1998) examined the relationship between inflation and growth using annual data from 1960-1996 for 145 countries. In their analysis, which covered IMF member countries, they included other variables that could influence these variables in the model and applied the decision tree method. They stated that the relationship between inflation and growth is nonlinear and that if the inflation rate is below 2%-3%, inflation positively affects growth, but if the inflation rate is above 2%-3%, inflation negatively affects growth.

Ghosh and Phillips estimated that reducing the inflation rate from 80% to 20% would increase the growth rate by 0.5%, while reducing the inflation rate from 20% to single digits would increase the growth rate to 2%. They also estimated that an increase in the inflation rate from 10% to 20% would reduce GDP per capita by 0.3-0.4%, and that an increase from 10% to 40% would reduce GDP by 0.8%.

Ghosh and Phillips emphasized that sudden and sharp drops in inflation (disinflation) can also be detrimental to growth, and that GDP may decrease during such periods, but this loss would be short-lived and could be beneficial for the economy in the medium and long term. They stressed that achieving price stability should be perceived as the primary goal in implementing necessary measures to reduce inflation.

Andres and Hemando (1998), who examined the effect of inflation on investments, stated that inflation negatively affects investments, and that its effect on growth is also negative, and that even low inflation rates have a temporarily reducing effect on growth. Ma (1998) examined the uncertain relationship between inflation and growth for the Colombian economy and stated that high inflation negatively affects growth and investment. He noted that inflation must be reduced to ensure both growth and investment. Christoffersen and Doyle (1998), who examined the relationship between inflation and growth for 22 transition economies during the 1990-1997 period, stated that inflation only negatively affects growth after a certain level, estimating the threshold value of inflation as 13%. They indicate that when inflation is above this threshold, it negatively affects growth.

Gylfason (1999), who examined the relationship between inflation and growth using cross-sectional data, stated that there is a negative and significant relationship between inflation and growth. Yalçın (1999), using a panel dataset, examined the relationship between sectoral price increases and sectoral growth rates in Türkiye during the 1983–1994 period and stated that sectoral price increases negatively affect the growth rates of sectors. Kalkan (1999), examining the relationship between inflation and growth in the Turkish economy, investigated the relationship between inflation and growth in the 1982–1998 period through variables such as private investments, exchange

rates, and money supply, and argued that inflation negatively affected growth in Türkiye through investments and exchange rates.

Burdekin, Denzau, Keil, Sitthiyot, and Willett (2000) examined the relationship between inflation and growth using annual data from 1967-1992 with the generalized least squares method for 21 developed and 51 developing countries. They stated that the relationship between inflation and growth is nonlinear, and that if the relationship were estimated linearly, the effect of inflation on growth would be lower, and that inflation affects growth after a certain point. In developed countries, they estimated that a 1% increase in the inflation rate in the short term would increase growth by 0.15%, while a 1% increase in the inflation rate in the long term would decrease growth by 0.3%. They suggested that the results showed a trade-off with the short-term Phillips curve in developed countries, while in developing countries, no evidence was found of a relationship between inflation and growth in the short term, and that a 1% increase in the inflation rate decreased growth by 0.083% in the long term. Khan and Senhadji (2000), who suggested that the estimated threshold for inflation is 1% in developed countries and 11% in developing countries, stated that inflation below the threshold has a positive effect on growth, but in countries with high inflation, an inflation rate above the threshold has a negative and significant effect on growth. Gillman (2000) stated that in developing countries, the presence of developed capital markets could help to avoid high inflation rates. However, in countries with low inflation, it has been stated that inflation will positively affect growth.

Kirmanoglu (2001), who analyzed the relationship between inflation and growth in the Turkish economy during the period 1988:05-2000:12 by dividing it into 5 subgroups and using VAR and GARCH methods, made estimates by adding the

wholesale price index as the inflation rate, gross domestic product as the growth rate, and also the uncertain inflation rate and private investments to the model. The impulse-response analysis shows that an increase in the inflation rate reduces private investments and growth, while increasing uncertain inflation, and the results are statistically significant. In short, it is emphasized that there is a negative relationship between inflation, growth, and private investments. Engelbrecht and Langley (2001), in their study covering 136 countries from 1960-1994, examined the relationship between inflation and growth, using the consumer price index as the inflation rate and per capita gross domestic product series as the growth rate. The researchers developed their work based on the framework of the analysis conducted by Bruno and Easterly.

As a result of their analysis, they stated that the results of Bruno and Easterly's work were exaggerated and that their findings differed, concluding that the growth rate after the inflation crisis was not higher than the pre-crisis level. The analysis was conducted separately for open and closed economies, covering 22 countries with open economy characteristics and 28 crises, and 28 countries with closed economy characteristics and 37 crises. In open economies, during the period examined, a decrease in the growth rate was observed during the inflation crisis, and while there were improvements in the growth rate along with a decrease in the inflation rate, it did not reach the pre-inflation crisis level. In closed economies, it was estimated that the pre-crisis growth rate was 2.1%, the growth rate during the crisis was 1.1%, and the post-crisis rate was -0.38% during the period examined, and that there was no improvement in post-crisis growth, or even that it was below the pre-crisis level.

The study, which also examined the inflation and growth rates of 16 countries during a deflationary process, also observed

that although there were decreases in the general price level and growth rate during deflationary crises, there were increases in the general price level and growth rate after the deflationary crisis. The results obtained were statistically significant, and it was emphasized that deflation negatively affects growth in closed economies.

Bruno and Easterly stated that they estimated the cost of deflation on production; however, this process was not easy. Another criticism was that Bruno and Easterly's 40% and Sarel's 8% inflation rate threshold values were somewhat arbitrary because the inflation rate threshold value could be at a different level for each country. For example, countries with low inflation rates, such as Germany, and countries with high inflation rates, such as Brazil, experience different effects on growth when the inflation rate is above 20%.

The study emphasized that high inflation levels can negatively impact growth more severely than low inflation levels. It stated that inflation negatively affects growth in closed economies, whereas in open economies, growth rates after crises are higher than the world average. Farla and Carneiro (2001) examined the impact of inflation on growth in the Brazilian economy in the long and short terms using monthly data for the period 1980–1995. The model was estimated using the DF test for the unit root test, the error correction model, and the VAR method. In the study, which examined the impact of inflation shocks on the production level in the long term, it was stated that at the end of 24 months, 84% of the changes in real production were explained by changes in past inflation values, and 16% by real production itself. It has been stated that in the case of a temporary inflation shock, the response of the production level to inflation is initially positive and statistically significant, but this effect approaches zero over

time, and the response of inflation to the production level is initially negative and ultimately zero. It has been emphasized that a similar relationship exists when inflation shocks are continuous. The analysis concludes that in continuous inflation shocks, the continuous effect of production on the growth rate is not significant. It has also been noted that the effect of the growth rate on the inflation rate is small during the period under review. Thus, the results support Sidrauski's super-neutrality of money, meaning that inflation has no real effect in the long run.

Ahmed and Rogers (2000), examining the relationship between growth and inflation in the US economy using cointegration and error correction models within the framework of endogenous growth models, stated that countries with high inflation and countries with low inflation should be examined separately because in countries with high inflation, the effect of inflation on growth is negative and strong, while in the US, which is in the group of countries with low inflation, the effect of inflation on growth can be positive.

Heylen, Dobbelaere, and Schollaert (2001), in a study covering 89 countries from 1970 to 2000, defined low inflation as below 10–15% and stated that inflation negatively affects growth if it is above 10–15%. Fountas, Karanasos, and Kim (2001), examining the relationship between inflation and growth in the Japanese economy using monthly data from January 1961 to December 1999, investigated the relationship between inflation, output growth, inflation uncertainty, and output uncertainty using the Granger causality test.

The Granger causality test revealed that the direction of causality between inflation and inflation uncertainty is from inflation-to-inflation uncertainty, and the same relationship exists from the level of output to the uncertainty in the level of output. The positive sign for both relationships indicate

statistical significance. It was also emphasized that the relationship between inflation and output is from inflation to output, with a negative sign and statistical significance. Yılmaz, Akçay, and Alper (2002), who examined the relationship between inflation and growth using both panel and time series data, initially studied the relationship between inflation and growth in 29 developing countries covering the period 1970–2000 using panel data and stated that the relationship between inflation and growth is not linear.

Yılmaz, Akçay, and Alper (2002), who examined the relationship between inflation and growth using both panel and time series data, in the first stage of their analysis, used panel data from their study covering 29 developing countries from 1970 to 2000 to examine the relationship between inflation and growth, stating that the relationship between inflation and growth is not linear. They state that the threshold inflation value supports previous studies and that this threshold inflation value is 10%. They argue that when inflation is below 10%, there is no statistically significant inflation-growth relationship for inflation rates, but when the inflation rate is above 10%, inflation has a negative effect on growth.

In the second stage of the analysis, the researchers, using the logarithmic growth equation used by Khan and Senhadji (2001), used the real growth rate of GDP, the inflation rate, the threshold inflation rate, the population growth rate, the ratio of external debt to GNP, and the share of private investments in GDP as variables. The results obtained using the growth equation estimated a threshold inflation rate of 13%. It was found that inflation negatively impacts the growth rate when it exceeds 13%. The estimated inflation coefficient above the threshold value was statistically significant. In a developing country with an inflation rate above 13%, assuming all other variables remain constant, they suggest that doubling the

inflation rate would reduce the annual real GDP growth rate by 1.3%. It was noted that when the inflation rate is below 13%, it positively impacts the growth rate, but the estimated inflation coefficient is not statistically significant. However, when conditional variables are added, the estimated coefficients of the variables are significant, and their signs are as expected. In a study using annual inflation data, they state that with a threshold inflation rate of 17%, doubling the inflation rate reduces the growth rate by 1.7%. In another study, researchers examining the relationship between inflation and growth in Türkiye using quarterly time series data for the period 1990:02-2002:1 determined that the relationship between inflation and growth was not linear, with a quarterly threshold inflation rate of 9% and an annual rate of 41%.

Diboğlu and Kibritcioğlu (2001), who examined the relationship between inflation and production in the Turkish economy and the fluctuations of this relationship over time, analyzed this relationship with structural VAR and the dynamic open aggregate demand and aggregate supply model with incomplete capital mobility using quarterly data from the 1980-2000 period. To determine the dynamic effect of each shock, impulse response analysis and variance decomposition were used, and the VAR model was estimated by selecting real domestic prices of crude oil, gross domestic product (GDP), exchange rate, consumer price index (CPI), and money supply (MI). It has been stated that real demand shocks have a positive and significant effect on inflation in the long run, and that inflation's response to a monetary shock is also positive and significant. While production responds positively and significantly to supply shocks, its response to monetary shocks is not significant.

Gillman et al., (2002), in their study covering the period 1961-1997 (although some countries are not included in this

period), examined the relationship between inflation and growth using panel data. The study consists of three panel datasets. The first group comprises 29 OECD member countries, the second group comprises 18 APEC member countries (six of which are OECD countries), and the third panel dataset comprises 41 countries. The panel dataset includes variables such as per capita gross national product, average annual gross national product, gross national product deflator, and the ratio of domestic investment to gross national product.

Gillman, Harris, and Matyas divided countries into three groups based on inflation rates: 0–10%, 10–20%, and above 20%. They state that inflation has a negative impact on growth at low inflation rates between 0–10%. However, they note that the relationship between inflation and growth is not linear and is negative in OECD and APEC countries. In APEC member countries, they state that inflation has a positive impact on growth when the inflation rate is between 0–10%, but this effect is not statistically significant. Gillman and Otto (2001), examining the relationship between inflation and growth using a panel dataset created with three different inflation averages for OECD countries from 1961-1997, grouped countries according to their inflation rates (0-10%, 11-20%, and above 20%). For the group of countries with an inflation rate between 0% and 10%, the regression coefficient in the growth equation was estimated at 0.23; for the group of countries with moderate inflation, the regression coefficient was estimated at -0.15; and for the group of countries with an inflation rate above 20%, the regression coefficient was estimated as -0.11.

Khan and Senhadji (2001), who examined the relationship between inflation and growth using 5-year averages for 140 developed and developing countries during the period 1960-1998, estimated the threshold value of the inflation rate using a maximum likelihood test to determine the effect of inflation

on growth in both developing and developed countries. The researchers, who estimated the threshold value to be 11%-12% in developing countries and 1%-3% in developed countries, emphasized that inflation above these rates negatively affects growth. It has been estimated that when the inflation rate rises from 3% to 40%, the growth rate decreases by 1.01% in developing countries and by 1.66% in developed countries; and when the annual inflation rate falls from 60% to 15% in developing countries, the growth rate (gross domestic product) increases by 1.24%.

Khan and Senhadji (2001) examined the relationship between inflation and growth using five-year averages of 39 years of panel data from 140 countries in their model. The threshold value of inflation was estimated for developed and developing countries, and the threshold value of inflation was determined as 1% in developed countries and 11% in developing countries.

Chang and Black (2002), who examined the relationship between inflation and growth for the US economy within the framework of neoclassical monetary theory and the Mundell-Tobin model, stated that the relationship between inflation and growth is not linear. In their study, Chang and Black emphasized the importance of the optimal inflation rate and stressed that decreases in the maximum production level are not significant at the optimal inflation rate. Economic decision-makers have stated that accurately estimating optimal inflation rates is necessary, and that policies aiming for high growth rates should not target zero inflation. Researchers, who estimate that a zero-inflation rate reduces the growth rate by 4.16%, stated that the optimal inflation rate for the US economy is 2.1%, and that maximum growth can only be achieved at this rate. They argued that if the inflation rate is above 11.18% and below 3.26%, the effect of inflation on growth is negative. For the

Turkish economy, TÜSİAD (2002), examining the relationship between inflation and growth using panel and time series data, stated that if Türkiye halves its inflation (from 40% to 20%), the annual growth rate will increase by an average of 1.8% to 2.8% in the long term, and a threshold value was calculated for both the inflation growth rate and the debt stock growth rate when examining the negative effects of inflation. In TÜSİAD's study, which used a panel dataset and covered 29 developing countries from 1970-2000, it was stated that the relationship between inflation and growth is not linear, that the threshold value of the inflation rate is 13%, and that an increase in the inflation rate above this threshold negatively affects the growth rate.

In this study, the logarithmic growth equation used by Khan and Senhadji (2001) was used to determine the nonlinear relationship between inflation and growth. As a result of the study conducted with panel data, it was estimated that in a country with inflation above the 13% threshold, assuming other factors remain constant, a doubling of the inflation rate (from 30% to 60%) would reduce the average annual GDP growth rate by 1.3% in the long run. This study, which examines the relationship between inflation and growth using time series data, found that the relationship between inflation and growth was not linear in the quarterly data from 1990:02 to 2002:1, and the threshold value of the inflation rate was estimated as 9% in the quarterly data. This rate corresponds to 41% on an annual basis.

Khan (2002) examined the relationship between inflation and growth for developed and developing countries using the Khan and Sendhadji (2001) equation with a panel data set covering 5-year averages of 140 countries and stated that the relationship was not linear. The threshold value of the inflation rate was estimated as 1% in developed countries and 11% in

developing countries. It was stated that the inflation rate below the threshold inflation rate was not statistically significant.

Apergis (2003) investigated the causality between inflation, output level growth, and uncertainty in inflation for G-7 countries using a panel data set with a univariate GARCH model. It has been stated that in the period 1960-2000, using monthly data, the first difference of the logarithmized series is stationary, and inflation positively affects uncertain inflation. Karaca (2003) determined that in Türkiye, using quarterly data from 1987-2002, there is a negative unidirectional causality from inflation to growth, and that every point increase in inflation reduces the growth rate by 0.37 points. Braun and Tella (2004), unlike other studies, examined the relationship between inflation and its variance using a two-stage least-squares method with a 75-country model. They emphasized that the variance of inflation negatively affected growth by reducing investments and led to deteriorations in the social structure by negatively impacting the welfare of individuals.

Terzi and Oltulular (2004-a), in their study examining the inflation-growth relationship for the Turkish economy using monthly data from 1987:1 to 2003:5, obtained results supporting the view that there was a negative relationship between gross national product and inflation in the short and long term. Examining the causal relationship between inflation and growth rates in the Turkish economy during the 1924–2002 period, Terzi (2004) argued that in causality tests, there was a unidirectional and negative causal relationship from inflation to growth, which was not reciprocal between the variables. In addition to empirical studies, this research, using ordinary least squares, correlation, and causality analyses, emphasized that there was a negative relationship between inflation and growth, and that to achieve continuous and increasing growth, priority should be given to inflation-reducing policies in stabilization

programs. Analyzing the relationship between inflation, growth, and fixed capital investments using correlation, time series analysis, and a simultaneous equation system, Terzi and Oltular (2004-b) examined the inflation-growth relationship with three separate models using total, public, and private fixed capital investments. The models showed that the fixed capital investments-growth relationship was positive, but the inflation-growth and inflation-fixed capital investments relationships were negative. Contrary to the Mundell-Tobin effect, these results, supporting the neoclassical economic view, revealed that the relationship between inflation and growth, and inflation and fixed capital investments, was negative in the Turkish economy.

5.3. Studies Stating that There is No Relationship Between Inflation and Growth

This subsection includes opinions that there is no relationship between the relevant variables. As can be seen in the studies, those stating that there is no relationship generally consist of analyses conducted with data from countries without high inflation rates. Johnson (1967) stated that he could not find solid evidence of either a negative or positive relationship between inflation and growth. Levine and Renelt (1992), stating that the foundations of growth should be determined before analyzing the relationship between inflation and the level of production, stated that there was no significant relationship between the inflation rate and per capita production growth after including the total ratio of human and physical capital. In conclusion, it has been stated that the relationship between inflation and production growth is fragile.

Bullard and Keating (1995), who examined the relationship between inflation and production levels in 58 countries in the short and long term, determined that there was a scholastic trend between the two series in the long term. The researchers

suggested that estimating the regression of each country separately would be more reliable than examining the countries as a group, and concluded that there was no systematic relationship between the constantly changing inflation rate and the production level.

Clark (1997) argued that there were no satisfactory results in model selection and that both existing theories and empirical models created to estimate the relationship between inflation and growth were ineffective. Temple (2000) stated that in countries with inflation rates below 15% or 20%, there was no relationship between inflation and growth, but such a relationship may exist in high inflation. Despite the scarcity of studies stating that there is no relationship between inflation and growth, there are quite a few empirical studies showing a significant relationship between these two variables, as shown in Tables 1.

Table 1: Literature reviews

Author(s)	Country Number	Period	Data	Impact on Growth (%)
Fischer (1991)	73	1970-1985	Cross-section	2.1
Gylfason (1991)	37	1980-1985	Cross-section	2.0
Roubini ve Sala-i Martin (1992)	98	1960-1985	Cross-section	2.2
De Gregorio (1993)	12	1950-1985	Cross-section	0.7
Fischer (1993)	80	1960-1989	Cross-section	1.8
Barro (1995)	100	1960-1990	Panel data	1.0-1.5
Gylfason ve Herbertson (1996)	145-170	1960-1992	Panel data	0.6-1.3
Barro (1997)	80-87	1960-1990	Panel data	1.3-1.8
Bruno ve Easterly (1998)	97	1961-1992	Panel data	1.2
Gylfason (1999)	160	1985-1994	Cross-section	2.4

Source: Gylfason, 1999

6. The Course of Inflation and Economic Growth in the Turkish Economy During the Period 1924-2025

The courses of both inflation and growth during the period 1924–2004 have been examined by dividing the periods into subgroups according to their characteristic features. The programs implemented in the sub-periods have been analyzed primarily within the framework of inflation and growth, and the effects of monetary and fiscal policies in these periods have also been emphasized.

Although the agricultural sector's share was higher than that of other sectors during 1924–1929, its growth rate decreased over time. The industrial sector's growth rate was 8.03% during the 1924-1929 period, while it reached 11.67% during the 1930-1939 period. Table 2 clearly shows that the service sector's growth rate also followed a decreasing trend over time.

Table 2: Trends in Agriculture, Industry, and Service Sectors Over Time

Variable	24-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	00-03
Agricultural	15.92	6.01	2.00	6.58	1.52	1.87	0.68	1.56	0.43
Industrial	8.03	11.67	-0.53	9.20	9.49	6.38	5.97	4.64	3.94
Services	8.10	7.83	0.57	6.86	6.63	5.67	4.60	4.20	3.84

The Course of Inflation and Economic Growth in the Turkish Economy During the Period 1924-1969

During this period, the growth rate averaged 5.6%. However, the highest growth rate was 31.9% and the lowest was -15.3%. The inflation rate reached a high of 94.1% and a low of 24.2%. Although inflation was high in some periods, it averaged double-digit figures. As seen in Appendix Figure 5, there is no inverse relationship between inflation and growth during this period, except for the 1939-1942 period.

6.1. 1924-1929 Period

During the 1924-1929 period, fluctuations were observed in the GDP rate. Seasonal movements in agricultural products, resulting in fluctuations in domestic and foreign market demand, were reflected in the GDP. During this period, the agricultural sector accounted for the largest share of income, at 40-50%. During this period, the agricultural sector appears to have been the driving force behind growth.

The 1929 economic crisis had negative effects on Türkiye, as it did on many other countries. As a result of the economic crisis affecting exporting countries, export volumes decreased, negatively impacting growth through the export channel. Although the growth rate rose from 11% in 1928 to 21.6% in 1929, these negative developments had an impact, and the growth rate sharply declined to 2.2% by 1930. The inflation rate also remained at the same level of 2.2% in 1929 and the previous three years. Despite the decrease in the growth rate during this period, inflation was not a problem.

6.2. 1930-1939 Period

While the national currency was stable until 1929, instabilities began to occur from that date onwards. One of the reasons for this was the reflection of the effects of the 1929 world economic crisis. The decrease in exports to countries experiencing crises, and the resulting drop in prices of exported goods even when exports did occur, negatively impacted growth. Since exports constitute a significant share of GDP, such an effect negatively impacted both growth and the balance of payments. Another reason was bad other conditions. Considering that agricultural sector growth had a significant share in GDP during that period, the decline of the agricultural sector, affected by weather conditions, also reduced the growth rate. While the growth rate increased by 21.6% in 1929, it was

2.2% in 1930 due to these reasons. In 1936, the growth rate reached its highest level since the Republican era, at 23.2%. This rate was only reached again in 1946. At the same time, the inflation rate in 1936 was 11.3%.

6.3. 1940-1949 Period

The decline in growth during the 1940s was significantly influenced by a general recession in the world economy, the fact that the agricultural sector accounted for 40% of GDP, and the conscription of the workforce during the war years. While the growth rate was 6.9% in 1939, it fell to -4.9% in 1940, showing a tendency to decrease with fluctuations. The inflation rate rose from 1.7% in 1939 to 25.4% in 1940, and this increase continued until 1944, after which it slowed down, but this slowdown continued until 1947.

6.4. 1950-1959 Period

In 1950, the aim was to implement policies that would ensure growth at all costs. During these years, Keynesian policies began to be implemented, and as a result of policies aimed at increasing aggregate demand, very rapid growth was achieved in the 1950-1953 period. However, the fact that the growth rate reached -3% in 1954 showed that this growth was not sustainable. The Korean War caused declines in the growth rate, and a foreign exchange shortage negatively affected import. The increase in exchange rates against the Turkish Lira raised the prices of imported intermediate goods. Since imported intermediate goods constitute a large share of the Turkish economy, these developments negatively affected production. This decrease in production also reduced the GDP rate. At the same time, producers reflected the cost-related increases caused by the rise in the prices of imported intermediate goods in their prices. This negative development led to an acceleration of inflation. During this period, while the goal was to increase

the growth rate, no target was set regarding price stability. There was no noticeable inflation during the 1950-1953 period. However, by 1956, the inflation rate had more than doubled (16.8% in 1956). To prevent this increase, from 1955 to 1956 both central and local governments controlled the maximum retail prices of certain food items (Parasız, 1998).

In the 1950s, to alleviate inflationary pressure, interest rates were kept at a ceiling below market interest rates, and a tight monetary policy was implemented regarding interest rates. Interest rates were seen as a tool in the fight against inflation.

In the 1950s, the agricultural sector was considered a driving force of growth; therefore, its development was prioritized. While the growth rate of the agricultural sector was 2% between 1940 and 1949, it reached 6.58% between 1950 and 1959.

In the 1950s, the share of investments in Türkiye's GDP gradually increased; however, problems in importing raw materials and intermediate goods due to foreign exchange shortages led to a decrease in both investments and production. However, if raw materials and intermediate goods could be imported instead of investment goods, neither the decrease in the growth rate nor the increase in the inflation rate would have occurred. These developments had a significant impact on the intensification of inflation during this period.

6.5. 1960-1969 Period

In 1963, the First Five-Year Development Plan aimed for an annual GDP growth rate of 7%. Arthur Lewis stated that achieving growth exceeding 5% annually was difficult in many developing countries. According to Lewis, the ability of developing countries to achieve growth higher than 5% depends on the availability of new arable land and irrigation

investments in the agricultural sector, and the presence of a rapidly developing mining sector.

The 7% growth rate targeted by the First Five-Year Development Plan (1963–1967) was achieved at a rate of 6.7%. The implementation of policies to increase productivity in the agricultural sector played a significant role in approaching the growth rate target. With the collective bargaining and strike law adopted in 1963, unions began to secure wage increases. Producers, whose costs increased with wage increases, reflected this increase in prices. The effects of these increases led to a stagflation process and a cost-driven inflationary process. When wages increase faster than productivity, inflationary pressures arise. One of the most important causes of inflation in Türkiye is the high public sector borrowing requirement (PSR) ratio. The need for public borrowing leads to higher interest rates, which in turn reduce investment, consequently causing a decrease in growth and cost inflation.

Cost inflation occurs when increases in the prices of factors of production are reflected in the final products. It stems from increases in input prices, such as exchange rates, nominal wages, and oil prices. It can be said that the inflation experienced in the 1960s was not demand-driven. The inflation in 2001 can be considered cost-driven inflation resulting from the depreciation of the Turkish Lira (costs). Demand inflation can be defined as the situation in which the demand for goods and services cannot be met by the supply. The inflation in 2000 can be said to have stemmed from excess domestic demand, i.e., demand inflation.

In the 1960s, the inflation rate in Türkiye rose moderately. From 1960 to 1971, the inflation rate remained in single digits. In moderate inflation, the inflation rate rises slowly, and the annual inflation rate remains below 10%. In 1965, expansionary

monetary and fiscal policies were implemented to address the economic recession stemming from the Cyprus problem in 1964. These policies caused the inflation rate to jump from 1.3% in 1964 to 8.1% in 1965.

The inflation that occurred after 1970 stemmed from factors such as public spending and the financing of public sector deficits through currency issuance, military spending, infrastructure projects, and rising prices of imported inputs. During this period (1970-2004 period), the growth rate averaged 4%, peaked at 9.8%, and dropped to 9.4%. The inflation rate averaged 48.9%, approximately seven times higher than the rate during the 1924-1969 period. The highest level was 149.6%, while the lowest was 8.1%. During this period, inflation was very high, and since it was perceived, that high inflation needed to be combated, monetary policies were implemented to take measures to fight inflation.

The Appendix Figures show the relationships between inflation and growth, inflation and fixed capital investments, and growth and fixed capital investments in the Turkish economy during the period 1976-2003 (Appendix Figures 8-13). It is noteworthy that the relationships between inflation and growth, inflation and total fixed capital investments, and inflation and public and private fixed capital investments are negative, while the relationship between growth and fixed capital investments is positive.

6.6. 1970-1979 Period

Due to the populist policies implemented in the 1969 elections, aggregate demand exceeded aggregate supply under the pressure created by public spending. This excess in aggregate demand was reflected as an increase in the inflation rate. The inflation rate, which was 8.1% in 1970, rose to 16.45% in 1971. The nearly doubling of the inflation rate in one year can

be attributed to the decrease in agricultural production and the resulting increase in the prices of agricultural products. Türkiye benefited positively from global economic developments in the 1970s, and with the stabilization measures of August 10th, the growth rate increased to 9.2% in 1972. However, the quadrupling of oil prices at the end of 1973 due to OPEC raising oil prices reduced the growth rate by 4.9%. This situation was reflected in the prices of imported goods and inputs. In addition to the inflation experienced in Türkiye during this period, imported inflation also had an impact. This led to a short but severe economic recession in 1974-1975 following the crisis. Inflation rose approximately five times more in the 1971-1977 period compared to the 1962-1968 period, while the growth rate remained at the same level during the same period. This result shows that the monetary policy implemented during this period caused the inflation rate to increase rather than decrease.

6.7. 1980-1989 Period

While the import substitution industrialization strategy was the dominant principle in the programs implemented until the 1980s, the 1980s saw the dominance of an opening-up and liberalization strategy. The liberalization process, beginning with the liberalization of imports, continued with the liberalization of capital movements. In Türkiye, closing budget deficits was largely achieved through domestic borrowing from the second half of the 1980s onwards. Because budget deficits were not financed by Central Bank resources, high inflation did not develop into hyperinflation.

Until the 1970s, inflationary pressure was not very intense, so it was not a primary target in stabilization programs. In the 1980s, stabilization programs began to be implemented to combat inflation. The increasing inflation rate, stagnant exports, and decreasing domestic savings until the 1980s

played a significant role in the decision to prioritize inflation as a primary target in the January 24, 1980 Stabilization Program. In addition, structural reforms such as developing exports and liberalizing imports were targeted.

The initial effects of this stabilization program were that the inflation rate decreased from 98.75% in 1980 to 35.45% in 1981. These decreases continued, though not significantly, until 1988. With the populist policies implemented in 1988, inflation began to accelerate again. Inflation, which was 36.77% in 1987, almost doubled to 64.55% in 1988.

Significant fluctuations in annual growth rates have been observed in the Turkish economy since 1980. The standard deviation of growth rates increased more in the 1981-1999 period compared to the 1960-1979 period. Doğruel (2002) stated that the growth rate decreased in periods when the standard deviation of the growth rate increased. Between 1982-1987 and 1994-1997, supply-side shocks had a moderate impact on inflation. Part of the inflation increase can be explained by rising oil prices (Dibooglu and Kibritcioglu, 2001).

In the 1980s, the gradual increase in prices led to a decrease in real wages. Despite the decrease in real wages, wages were increased through the intervention of unions. Producers, whose costs increased, reflected this increase in prices and continued production. This increase in prices further increased the already high inflation and contributed to the formation of a wage-price spiral. Around this period, high inflation and a wage-price spiral were also experienced in the Argentine and Brazilian economies, but in Türkiye, the existence of laws restricting union activities in labor markets prevented the development of a wage-price spiral.

Although the growth rate was 9.7% in 1987, sustainable growth could not be achieved in subsequent years. To achieve

sustainable growth, the inflation rate needs to be reduced. It is clear that low inflation (the optimal inflation rate) is a necessary but not sufficient condition for sustainable growth.

Table 3: Relationship between Inflation and Growth (1990-1999 Period)

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Growth rate	9.4	0.3	6.4	8	-6.1	8	7.9	8	3.8	-6.1
Inflation rate	48.6	59.2	61.4	60.3	149.6	65.6	84.9	99.1	69.7	69

Source: TCMB

During this period, the April 5th stabilization decisions began to be implemented. Decisions were made to reduce the inflation rate and ensure economic stability. The April 5th, 1994 decisions show that a shock strategy was applied to reduce the inflation rate. The shock strategy is preferred to reach the targeted inflation rate in a short time. However, if this strategy is successful, it can lead to very high price increases, i.e., an increase in the inflation rate and the possibility of economic stagnation; this can be considered a disadvantage of this strategy. The importance of expectations in this strategy makes the credibility and reliability of the shock strategy crucial.

In stabilization policies, either orthodox or heterodox decisions, or a combination of these two, are implemented. The April 5th decisions show that a mixed stabilization policy was implemented. In the April 5th decisions, only wages and salaries were frozen. It can be said that the April 5th decisions implemented an orthodox stabilization policy containing elements of a heterodox stabilization policy. In 1994, a significant increase in salaries was not targeted. Orthodox stabilization policies aim to control the nominal money supply and public spending. Heterodox stabilization policies, on the other hand, aim to freeze some of the increases in prices such

as wages, salaries, interest rates, and exchange rates, but this is not the case in the price mechanism of the private sector.

In price increases, while public deficits are a determining factor in the long run, cost elements such as exchange rates and interest rates, which interact with prices, play an important role in the short run (Parasız, 1998). In 1997, the inflation rate reached 99.1%, and the rise in oil prices in the second half of 1997 was effective in increasing the inflation rate. While inflation in the second half of 1997 was supply-side, the inflation experienced in the first half had a demand-side structure.

The sudden increase in the inflation rate after the second half of 1997 led to the implementation of a phased strategy to combat inflation on July 1, 1998. In 1997-1999, a monetary policy based on inflation-targeted exchange rate policy was implemented. As in the April 5th decisions, instead of shock policies implemented to reduce inflation, a policy based on gradually reducing inflation was adopted. As a result of the implemented policies, the inflation rate decreased from 99.1% in 1997 to 69.7% in 1998. The positive development in the inflation rate coincided with the global economic crisis, negatively affecting the achievement of the desired inflation rate. The loans extended by the central bank showed a decreasing trend from 1998 onwards. Despite the decrease in financing public deficits through emission, it has been suggested that the monetary growth during that period may have had a monetary rather than a fiscal character in Türkiye (Kızılyallı, 1999). One of the most important developments of this period is the inertial nature of inflation in Türkiye. The monetary program announced in the stand-by agreement with the IMF in 1999 first stated that inflation had gained inertia. If expected inflation reflects past inflation, and if there is slow adjustment in wage setting due to long-term contracts, then inflationary inertia exists in the economy. Otherwise, if there

is rapid adjustment in prices and wages, inertia does not exist. In short, inflationary inertia is the slow response of inflation to changes in policies.

6.9. 2000-2004 Period

In November 2000, an unexpected micro-level financial crisis severely undermined confidence in monetary and exchange rate policy. Negotiations began with the IMF to renew the program, which had lost its effectiveness. The 2000 CPI and GDP targets were set at 25% and 5%-5.5%, respectively. The program that Türkiye tried to implement with the IMF after the 2001 crisis was based on a floating exchange rate. Mexico, after its crisis in 1995, used a floating exchange rate to spread its inflation target over a specific period as part of its program to reduce inflation. As a result of Mexico's program, the inflation rate was reduced from approximately 35% to 5%, and this fight against inflation did not come at the expense of growth. The average growth rate over the four years following the 1995 crisis was 5%. The most important arrangement that distinguished the IMF-supported anti-inflation program from the exchange rate peg-based IMF programs previously implemented in countries experiencing high inflation was that the exchange rate peg was gradually phased out 18 months after the program's implementation, and a smooth transition to a free floating exchange rate regime was foreseen at the end of the third year. This aimed to prevent the overvaluation of the national currency and the resulting forced devaluation and program failure, which were observed in other long-term stabilization programs based on exchange rate pegs (TÜSIAD, 2002).

In the 2001 budget, prepared in collaboration with the IMF, the goal was to increase the primary surplus to 5% of GDP. Simultaneously, the CPI inflation rate was targeted at 12%, and a real GDP growth rate of 4-4.5% was aimed for. Following

the 2001 crisis, growth of 5.1% was achieved in 2002 and 5.9% in 2003. Against the view that the growth rate increased in 2002 and 2003, and that the sustainability of the program was not questioned, and that the stabilization program was successful and the 6.5% primary surplus target was defended, the conclusion reached by Barro and Lee is truly striking.

Barro and Lee argue that while IMF programs may not have negative effects in the first five years, they have a significant negative impact on growth in subsequent periods. The two key conditions for growth are stability and the quality of human capital, and IMF programs prioritize stability while neglecting human capital investments.

Due to factors such as the control of domestic demand through tight monetary and fiscal policies, significant decreases in inflation were observed in 2002. The inflation rate, which was 69% in 2001, fell to 30% in 2002. From the second half of May 2002 onwards, a cost-driven price increase was observed due to rising interest rates and exchange rates. For the first time in 25 years, public inflation expectations aligned with the government's and the Central Bank's targets. In 2002, inflation was targeted at 35%, in 2003 at 20%, in 2004 at 12%, and in 2005 at single digits (Serdengeçti, Monetary Policy Report).

In 2004, the inflation rate was targeted at 12%, but it actually reached 9.3%. The targeted inflation rate for 2005 is 8%. When inflation and growth rates are considered together, it is seen that the best performance in the last 32 years was achieved in 2004, and the Turkish economy experienced growth for three consecutive years for the first time since 1997. At the same time, a significant decrease in inflation volatility, which constitutes a major obstacle to the predictability and foreseeability of inflation, has been observed. In recent years, a period of high growth has been recorded simultaneously with the decrease in the inflation rate.

6.10. 2005-2025 Period

The 2005-2025 period is a time for the Turkish economy marked by significant shifts in inflation and economic growth dynamics, and determined by policy changes and external shocks. This period exhibits internal variations. The 2005-2013 period can be considered a time of relative stability and high growth. During this period, Türkiye experienced an average economic growth rate of 5-7%. Although there was a short-term contraction during the 2008 global crisis, recoveries were observed. Growth generally ranged between 6-10% between 2005-2013. Furthermore, this period can be described as one of the periods in which Türkiye came closest to price stability.

The 2013-2018 period, while experiencing increased economic growth, has been volatile due to the impact of rising vulnerabilities. The 2016 coup attempt and geopolitical risks put pressure on growth. Inflation is showing an upward trend again. Exchange rate volatility and cost pressures have become more pronounced. The 2018 exchange rate crisis significantly impacted economic growth.

The economic contraction in 2019 negatively affected economic growth, and inflation reached double-digit figures. At the same time, exchange rate pass-through became much more pronounced during this period. It is noteworthy that the increase in the inflation rate was even greater in the 2021-2025 period.

Generally speaking, the Turkish economy between 2005 and 2025 transformed from a structure that initially approached price stability and exhibited high growth performance, to one where macroeconomic vulnerabilities increased and the inflation-growth balance deteriorated. Particularly in the period after 2018, exchange rate shocks and the low interest rate policies implemented after 2021 made inflation dynamics decisive, while the sustainability of growth became questionable.

7. Conclusion and Recommendations

Although inflation was at a low enough level to not be considered a problem until the 1970s, it has remained high in the Turkish economy for approximately the last 50 years. During this period, inflation could not be reduced and developed strong inertia. Many anti-inflation programs were implemented to reduce inflation during this period; however, lasting success was not achieved, despite some temporary successes.

The Turkish economy from 1924 to 2005 can be considered a long and multi-layered process in which inflation and economic growth dynamics were largely shaped within the framework of structural transformations, development strategies, and macroeconomic instabilities. This period includes significant breaks, leading from a planned development period to a period of chronic instability characterized by high inflation.

The 1924–1950 period, within the framework of limited industrialization capacity and state-led development policies, saw low but relatively balanced economic growth, while inflation generally remained under control. State-led economic policies and foreign trade restrictions, particularly those implemented in the 1930s, prevented excessive volatility in the general price level. However, increased public spending and supply constraints during the Second World War years caused a temporary rise in inflationary pressures.

In the period 1950–1980, with the transition to a multi-party system, more liberal policies were adopted, and efforts to open up to the world and mechanization in agriculture significantly supported economic growth. In addition, the increasing inefficiency of the import substitution industrialization strategy, the increase in external deficits, and foreign exchange bottlenecks weakened macroeconomic balances. During this process, inflation gradually increased and began to show a tendency towards becoming chronic.

In the post-1980 period, with the January 24th Decisions, the Turkish economy shifted towards an export-oriented growth model, and the financial liberalization process accelerated. While this transformation offered new opportunities for economic growth, it led to high levels of inflation due to a lack of fiscal discipline and financial vulnerabilities. The 1990s are notable for their volatile growth and near-triple-digit inflation, which was marked by increasing public deficits, political instability, and frequent crises.

This fragile structure peaked with the 2001 Turkish economic crisis; structural reforms implemented after the crisis, an independent monetary policy framework, and fiscal discipline measures were significant turning points in reducing inflation and re-establishing growth. In the post-2001 period, inflation declined rapidly, economic growth became more stable, and by 2005, the Turkish economy could be described as having achieved a balance between low inflation and high growth.

Overall, the 1924–2005 period of the Turkish economy demonstrates a process in which inflation persisted as a long-standing structural problem and economic growth performance was largely closely linked to macroeconomic stability. It clearly shows that sustainable growth is impossible in an economic structure where price stability cannot be achieved; conversely, it demonstrates that reliable and disciplined policy frameworks are crucial for both controlling inflation and ensuring stable growth. The period from 2005 to 2025 in the Turkish economy can be described as a process in which the relationship between inflation and economic growth changed significantly over time, undergoing transformation under the influence of different policy choices and external shocks. While this period was initially characterized by macroeconomic stability, controlled

inflation, and sustainable growth performance, this balance gradually weakened in subsequent years.

Owing to the tight monetary and fiscal policies implemented between 2005 and 2013, inflation was maintained at single-digit levels, and economic growth followed a strong trajectory. However, after 2013, changes in global financial conditions, increasing geopolitical risks, and domestic macroeconomic vulnerabilities made growth performance more volatile and created upward pressure on inflation. This trend became even more pronounced with the 2018 exchange rate crisis, paving the way for inflation to become a structural problem. The low interest rate-focused policy approach implemented after 2021, while supporting economic growth in the short term, can be said to have caused significant costs in terms of price stability. The rise in very high inflation levels has increased inflation expectations, created negative effects on income distribution, and weakened macroeconomic stability. This process has also deepened debates about the quality and sustainability of growth.

Overall, price stability should be a fundamental priority for achieving sustainable and healthy long-term growth performance in the Turkish economy. In an economic environment where inflation cannot be controlled, the sustainability of growth remains limited, and the gains achieved are temporary. In this context, a macroeconomic framework supported by predictable and reliable monetary policies and strengthened by structural reforms plays a critical role in combating inflation and ensuring stable growth.

In Türkiye, as economic growth is based on domestic demand and has an inflationary effect, the first measure taken in inflation control programs has been to curb domestic demand. These measures have not only failed to reduce the

inflation rate but have also led to a decrease in the growth rate. If economic growth were based primarily on external demand, that is, exports, rather than domestic demand, both inflation and growth could be prevented.

In an inflationary environment, the economy's fragility increases because a large portion of the foreign capital entering the country consists of short-term investments. Consequently, high inflation prevents the inflow of foreign capital, that is, long-term investments that would increase growth and employment. While some economists argue that anti-inflation programs implemented to reduce the inflation rate may lead to a decrease in the growth rate, thus placing a burden on the economy, it is crucial that these potential decreases in economic growth (the sacrifice rate) are less than the gains achieved by reducing inflation. However, the view that a certain amount of economic growth must be sacrificed to bring inflation down to a certain level has lost its influence over time. At this point, implementing an appropriate disinflation policy is extremely important in the fight against inflation. Minimizing potential costs is closely related to a country's economic structure and the current economic conjuncture.

Despite these short-term decreases, considering the need to ensure both a stable price system and sustainable growth performance in the long term, some costs are acceptable. Moreover, looking at the Turkish economy in recent years, it is seen that increases in the growth rate have occurred alongside a reduction in the inflation rate. The Central Bank of the Republic of Türkiye has stated that its sole objective is to ensure price stability, and that interest rates, exchange rates, and other variables are only intermediate targets in achieving price stability, that is, in reducing the inflation rate. Central banks determine their interest rate decisions not based on

current inflation rates, but on the future trend of inflation. When central banks anticipate that the economy will face higher-than-expected demand, they can prevent potential overheating from leading to inflation.

In the Turkish economy, the historical trajectory of the relationship between inflation and economic growth clearly demonstrates the need for a balanced and holistic approach to policy decisions, rather than a one-sided one. To permanently reduce inflation, the policy interest rate must be determined in a way that is consistent with inflation expectations and provides a positive real return, and price stability should be the primary objective. In this regard, central bank independence should be strengthened. Freeing monetary policy from political influences is critically important for managing expectations. Forward guidance and transparent communication are crucial, and the effective use of the expectations channel, a vital tool in combating inflationary inertia, is extremely important. Since high budget deficits are a key factor fueling inflation, priority should be given to infrastructure, education, and technology investments instead of unproductive spending.

A production model dependent on imported inputs increases inflation through exchange rate pass-through. Domestic intermediate goods production should be encouraged. Food inflation is a significant component of overall inflation in Türkiye. Therefore, planned production, storage, and logistics infrastructure improvements become even more important. Furthermore, reducing energy dependence and increasing renewable energy investments can lessen the pressure of cost inflation. Adopting a production and export-oriented growth model instead of a consumption-oriented one, supporting high-value-added sectors (such as defense, software, and advanced technology), and increasing labor productivity

(education reform, skills matching) are also important in boosting economic growth. Sustainable economic growth is not possible without price stability. The fundamental problem of the Turkish economy is not a lack of economic growth, but rather the quality of economic growth.

Reference

- AGENOR, Pierre-Richard and HOFFMAISTER, Alexander W. "Money, Wages and Inflation in Middle-Income Developing Countries", IMF Working Paper, No. 174 (December 1997). www.imf.org/external/pubs/ft/wp/wp97174.pdf [Accessed September, 14, 2004].
- AHMED, Shaghil and ROGERS, John H. "Inflation and the Great Ratios Long Term Evidence from the US", Journal of Monetary Economics, Vol.45, Issue 1, (February 2000), pp.3-35.
- AKTAN, Coşkun C. "Monetarism and Rational Expectations Theory", (2000). http://www.canaktan.org/ekonomi/anayasal_iktisat/monetarizm/aktan-monetarizm.htm [Accessed September 14, 2004].
- AKDİŞ, Muhammet "The Rational Expectations School's Approach to Inflation and Interest Rates in Türkiye", Bank and Economic Reviews Journal, Year 29, Issue 6-7, (June/July 1992), pp. 61-65.
- ANDRES, Javier and HERNANDO, Ignacio "Does Inflation Harm Economic Growth? Evidence for the OECD", Working Paper, No. 6062, (June 1997), pp. 1-42.
- APERGIS, Nicholas "Inflation, Output Growth, Volatility and Causality Evidence from Panel Data and G7 Countries", Economics Letters, Yol.83, Issue 2, (May 2004), pp.185-191.
- APERGIS, Nicholas "The Inflation-Output Volatility Trade-off a Case Where Anti-Inflation Monetary Policy Turns Out to be Successful a Historical Assessment", Journal of Policy Modeling, Yol. 25, Issue 9, (December 2003), pp.881-892.
- AŞIRIM, Oğuz "Output Inflation Trade off Evidence from Türkiye", The Central Bank of The Republic of Türkiye Research Department, No. 9506, (April 1995). <http://www.tcmb.gov.tr/yeni/evds/teblig/96/9604.pdf>
- BALL, Laurence "Why Does High Inflation Raise Inflation Uncertainty?", Journal of Monetary Economics, Yol. 29, (June 1992), pp.371-388.

- BALL, Laurence “What Determines the Sacrifice Ratio”, NBER Working Paper, No. 4306, (March 1993), pp.1-43. <http://papers.nber.org/papers/W4306.pdf>
- BALL, Laurence, MANKIWI, Gregory N. and ROMER, David “The New Keynesian Economics and the Output Inflation Trade-off?”, Brookings Paper on Economic Activity, No. 1, (1988), pp.1-82. <http://papers.nber.org/papers/rl111.pdf>
- BARRO, Robert J. “Inflation and Economic Growth”, Bank of England Quarterly Bulletin, Vol. 35, (May 1995).
- BARRO, Robert J. “Determinants of Economic Growth a Cross Country Empirical Study”, NBER Working Paper, No. 5698, (August 1996). <http://papers.nber.org/papers/w5698.pdf>
- BARRO, Robert J. “Inflation and Economic Growth”, NBER Working Paper Series, No. 5326 (October 1995), pp.1-22.
- BARRO, Robert J. “Inflation and Growth”, Federal Reserve Bank of St. Louis Review, Vol.78, (1996), pp.153-169.
- BRAUN, Miguel and TELLA, Rafael Di “Inflation, Inflation Variability, and Corruption”, Economic&Politics, Vol.16, (March 2004), pp.1- 77.
- BRUNO, Michael and EASTERLY William “Inflation Crises and Long-Run Growth”, NBER Working Paper, No. 5209 (Cambridge, Massachusetts National Bureau of Economic Research), (1995).
- BRUNO, Michael and SACHS, Jeffrey “Economics of Worldwide Stagflation”, Journal of International Economics, Vol.21, Issues1-2, (August 1986), pp.187-191.
- BRUNO, Michael and SACHS, Jeffrey “Inflation Crises and Long-Run Growth”, Journal of Monetary Economies, No. 41, (1998), pp.3-26.
- BRUNO, Michael and SACHS, Jeffrey “Inflation and Growth in Search of a Stable Relationship”, Federal Reserve Bank of Louis, Vol.78, No. 3 (May/June 1996).
- BRUNO, Michael and SACHS, Jeffrey (1985) “Economics of Worldwide Stagflation”, Cambridge, Massachusetts, Harvard University Press.

- BULLARD, James KEATING, John “The Long-Run Relationship Between Inflation and Output in Postwar Economies”, *Journal of Monetary Economics*, No. 36 (December 1995), pp.477-496.
- BURDEKIN, Richard C. K. DENZAU, Arthur T. KEIL, Manfred W. SITTHIYOT, Thitithev WILLETT, Thomas D. “When Does Inflation Hurt Economic. Growth? Different Nonlinearities for Different Economies”, *Claremont Collegeges Working Papers in Economics*, (August 2000), pp.1-15. <http://econ.claremontmckenna.edu/papers/2000-22.pdf> [Accessed September, 10, 2004].
- CECCHETTI, Stephen G. RICH, Robert W. “Structural Estimates of the U.S. Sacrifice Ratio”, *Federal Reserve Bank of New York*, Vol.5, No. 71 (March 1999), pp.1-27.
- CHANG, Gene H. And BLACK, David C. “Nonlinearity of the Inflation-Growth Relationship and the Optimal Inflation Rate”, (April 2002). (<http://www.utoledo.edu/~gchang/publication/groinfilall.pdf>) [Accessed September, 10, 2004].
- CHRISTOFFERSEN, Peter and DOYLE, Peter “From Inflation to Growth Eight Years of Transition”, *IMF Working Paper*, No. (July 1998), pp.1-36. <http://www.imf.org/external/pubs/ft/wp/wp98100.pdf> [Accessed September, 24, 2004].
- CLARK, Peter K., COZIER, Barry and SELODY, J. “Cross-Country Evidence on Long Run Growth and Inflation”, *Federal Reserve Bank of Kansas City, Research Working Paper*, No. 93-05; also published in *Economic Inquiry*, Vol.35, (January 1993).
- CLARK, Peter “Inflation and the Productivity Decline”, *American Economic Review, Paper and Proceedings*, Vol.72, Issue 2, (May 1982), pp. 149-154.
- COZIER Barry and SELODY J. “Inflation and Macroeconomic Performance Some Cross-Country Evidence”, *Bank of Canada Working Paper*, (1992), pp.92-96.

- CUKIERMAN, Alex and MELTZER, Allan “A Theory of Ambiguity, Credibility, and Inflation Under Discretion and Asymmetric Information”, *Econometrica*, No. 54, (1986), pp.1099- 1128.
- CUKIERMAN, Alex “Central Bank Strategy, Credibility, and Independence Theory and Evidence” Cambridge, Massachusetts MIT Press, 1992.
- CUKIERMAN, Alex, KALAITZIDAJIS, Pantelis SUMMERS, Lawrence H. WEBB and Steven B., “Central Bank Independence, Growth, Investment, and Real Rates”, *Carnegie-Rochester Conference Series on Public Policy*, Vol.39, (December 1993), pp.95-140.
- ÇETİNKAYA, Arzu A. and YAVUZ, Devrim “Calculation of Output-Inflation Sacrifice Ratio the Case of Türkiye”, *The Central Bank of Republic of Türkiye*, No. 11, (October 2002), pp.1-19.
- DABROWSKI, Marek “Disinflation Strategies in Transition Economies and Their Effectiveness”, *Center for Social and Economic Research*, (December 1998). (<http://www.nbp.pl/konferencje/oced/mowy/dabrowski.pdf>) [Accessed September, 6, 2004].
- DAVIS, George KANAGO, Bryce “On Measuring the Effect of Inflation Uncertainty on Real GNP Growth”, *Oxford Economic Papers*, Vol.48, Issue 1, (1996), pp.163-175.
- DAVIS, George and KANAGO, Bryce “Contract Duration, Inflation Uncertainty, and the Welfare Effects of Inflation”, *Journal of Macroeconomics*, Vol.19, Issue 2, (April 1997), pp.237-251.
- DE GREGORIO, Jose “The Effect of Inflation on Economic Growth”, *European Economic Review*, Vol.36, Issue 2-3, (April 1992), pp.417-425.
- DE GREGORIO, Jose “Inflation, Taxation, and Long-Run Growth”, *Journal of Monetary Economics*, No. 31, (1993), pp.271-298.

- DİBOOGLU, Selahattin and KİBRİTÇİOĞLU, Aykut “Inflation, Output and Stabilization in a High Inflation Economy Türkiye, 1980-2000”, University of Illinois at Urbana-Champaign College of Commerce and Business Administration Office of Research Office of Research Working Paper Number, No. 01-0112, (April 2001), pp.1-31.<http://econwpa.wustl.edu/eps/mac/papers/0107/0107003.pdf>
- DICKEY, David A. FULLER, Wayne A. “Distribution of the Estimators for an Autoregressive Time Series with Unit Root”, Journal of American Statistical Association, Vol.74, (1979), pp.251-276.
- DICKEY, David A. FULLER, Wayne A. “Likelihood Ratio Statistics for An Autoregressive Time Series with a Unit Root”, Econometrica, No. 49, (1981), pp.1057-1072.
- DIPIETRO, William R. and SAWHNEY, Bansi L. “Does Growth Cause Inflation? Granger Casualty Tests on 98 Countries”, Indian Economic Journal, Vol.47, (Jule September 1999), pp.104- 109.
- DORNBUSCH, Rudiger and FISCHER, Stanley “Moderate Inflation”, The World Bank Economic Review, Vol.7, No. I, (1993), pp.1-44.
- DORNBUSH, Rudiger and FISCHER, Stanley “Macroeconomics”, Translated by Salih AK, Mahir FİSUNOĞLU, Refia YILDIRIM, first edition Akademi Publications, Istanbul, 1998.
- DOTSEY, Michael and SARTE, Pierre-Daniel G. “Inflation Uncertainty and Growth in a Cash-in Advance Economy”, Journal of Monetary Economics, Vol.45, Issue 3, (June 2000), pp.631- 655.
- DUNGEY, Mardi and PITCHFORD, John “The Steady Inflation Rate of Economic Growth”, The Economic Record, Vol.76, No. 235, (December 2000), pp.386-400.
- DURHAM, Benson, J. “Sacrifice Ratios and Monetary Policy Credibility Do Smaller Budgets Deficits, Inflation-Indexed Debt, and Inflation Targets Lower Disinflation Costs?” [http//](http://)

- www.federalreserve.gov/pubs/feds/200147/200147pap.pdf
[Accessed September, 10, 2004].
- EASTERLY, William “When is Stabilization Expansionary? Evidence from High Inflation”, *Economic Policy*, No. 2, (April 1996), pp.65-108.
- ECKSTEIN, Zvi and LEIDERMAN, Leonardo L. “Seigniorage and the Welfare Cost of Inflation Evidence from an Intertemporal Model of Money and Consumption”, *Journal of Monetary Economics*, Vol.29, Issue 3, (June 1992), pp.389-410.
- EDWARDS, Sebastian “The Short-Run Relation Between Inflation and Growth in Latin America”, NBER Working Paper, No. 1065, (January 1983), pp.1-15.
- EUFFINGER, Sylvester and SCHALING, Eric “Central Bank Independence in Twelve Industrial Countries”, *Banca Nazionale Del Lavarò Quarterly Review*, No. 184, 1993, pp.1-44.
- ENGEL, Robert F. and YOO, Sam B. “Forecasting and Testing in Co-Integrated Systems”, *Journal of Econometrics*, No. 35, (1987), pp.143-159.
- ENGEL, Robert F. GRANGER, Clive W. J. “Co-Integration and Error Correction Representation, Estimation and Testing”, *Econometrica*, Vol. 55, (1987), pp.251-276.
- ENGELBRECHT, Jürgen H. and LANGLEY, Chris “Inflation Crises, Deflation, and Growth Further Evidence”, *Applied Economics*, No. 33 (2001), pp.1157-1165. ERÇEL, Gazi “A General Assessment of the Relationship Between Inflation and Growth in Türkiye”, *IMKB Journal*, Vol. 3, No. 12, (October/November/December 1999).
- <http://www.tcmb.gov.tr/yeni/evds/konusma/tur/2000/enflasyon.html>
- ERDOGAN, Engin ENER, Meliha, FARİA, Joio R. CARNEIRO; Francisco G. “Recent Applications and Evaluation in the Fight Against Inflation in Türkiye”, *Journal of Economics, Business and Finance*, No. 177, (December 2000), pp.18-31.

- FARIA Joio and CARNEIRO Francisco G. "Does High Inflation Affect Growth in the Long and Short Run", *Journal of Applied Economics*, Vol. N, No. 1, (May 2001), pp.89-105.
- FISCHER, Stanley "Relative Shocks, Relative Price Variability and Inflation", *Brookings Papers on Economic Activity*, (1981), pp.381-431.
- FISCHER, Stanley "Towards an Understanding of the Costs of Inflation", *Carnegie-Rochester Conference Series on Public Policy*, No. 15, (1981), pp.5-41.
- FISCHER, Stanley "Towards an Understanding of the Costs of Inflation", *Carnegie-Rochester Conference Series on Public Policy*, No. 15, (1981), pp.5-41.
- FISCHER, Stanley "Inflation and Growth", *NBER Working Paper Series*, No. 1235, (November 1983), pp.1-18.
- FISCHER, Stanley "Growth Macroeconomics and Development", *NBER Macroeconomics Annual*, Vol.6, (1991) pp.329-364.
- FISCHER, Stanley "The Role of Macroeconomic Factors in Growth", No. 4565, (December 1993), pp.1-34.
- FISCHER, Stanley "The Cost and Benefits of Disinflation", *A Framework for Monetary Stability*, (1994), pp.31-41.
- FISCHER, Stanley "Economies in Transition the Beginnings of Growth", *American Economic Review Papers and Proceedings*, (May 1996), pp.229-233.
- FISCHER, Stanley "Ensuring Price Stability", (Trans. Hüseyin Şen), *Bankers Magazine*, Issue 31, (December 1999), pp.107-114.
- FISCHER, Stanley SAHAY, Ratna and VEGH, Carlos A. "Stabilization and Growth in Transition Economies The Early Experience", *Journal of Economic Perspectives*, Vol.10, No. 2 (Spring, 1996), pp.45-66.
- FISCHER, Stanley and ALAN, Gelb "The Process of Economic Transformation", *Journal of Economic Perspectives*, Vol.5, No. 4, (Autumn, 1991), pp. 91-105.
- FOUNTA, Stilianos KARANASOS, Menelaos and KIM, Jinki "Inflation and Output Growth Uncertainty and Their

- Relationship with Inflation and Output Growth”, *Economic Letters*, Vol.75, Issue 3, (May 2002), pp.293-301.
- FRIEDMAN, Milton and GILLMAN, Max “Nobel Lecture Inflation and Unemployment”, *Journal of Political Economy*, Vol.85, (June 1977), pp.451-472.
- FRIEDMAN, Milton and GILLMAN, Max “The Role of Monetary Policy”, *American Economic Review*, Vol.58 (1968), pp.1-17.
- GILLMAN, Max “The Welfare Cost of Inflation in a Cash-in-Advance Economy with Costly Credit”, *Journal of Monetary Economics*, No. 32, (1993), pp.51-77.
- GILLMAN, Max and KEJAK, Michal “Modeling the Inflation-Growth Effect”, Cerge.cuni.cz/mkej/inflgr7.pdf [Accessed September, 6, 2004].
- GILLMAN, Max and OTTO, Glenn “The Effect of Financial Innovation on the Demand for Cash a Test of the Cash-in-Advance Model with Costly Credit”, *Central European University Working Paper*, (2001).
- GILLMAN, Max, HARRIS, Mark and MATYA Laszlo “Inflation and Growth Some Theory and Evidence”, *Central European University Department of Economics Working Paper*, (2002). <http://ideas.repec.org/p/cpd/pd2002/d5-1.html> [Accessed September, 10, 2004].
- GHOSH, Atish and STEVEN, Phillips “Waming inflation may be Harmful to Your Growth”, *IMF Staff Papers*, Vol.45, No. 4 (December 1998), pp.672-710.
- GHOSH, Atish and WOLF, Holger “Thresholds and Context Dependence in Growth”, *NBER Working Paper*, No. 6480. <http://www.Nber.org/papers/w6480.pdf> [Accessed September, 14, 2004].
- GOMME, Paul “Money and Growth Revisited Measuring the Cost of Inflation in an Endogenous Growth Model”, *Journal of Monetary Economics*, No.32, (1993), pp.51-77.
- GRANGER, Clive W. J. “Investigating Causal Relations By Econometric Models and Cross-Spectral Methods”, *Econometrica*, Vol.37, (1969), pp.424-438.

- GRANGER, Clive and NEWBOLD, Paul “Spurious Regression in Econometrics”, *Journal of Econometrics*, Vol.2, (1974), pp.111-120.
- GRANGER, Clive and NEWBOLD, Paul “Developments in The Study of Co-Integrated Economic Variables”, *Oxford Bulletin of Economics and Statistics*, Vol.48, (1986), pp.213- 228.
- GRIER, Kevin B. and TULLOCK, Gordon “An Empirical Analysis of Cross-national Economic Growth”, *Journal of Monetary Economics*, Vol.24, Issue 2, (September 1989), pp.259-276.
- GRIER, Kevin and PERRY, Mark J. “On Inflation and Inflation Uncertainty in the G7 Countries”, *Journal of International Money and Finance*, Vol.17, Issue 4, (August 1998), pp.671-689.
- GRIER, Kevin and PERRY, Mark J. “The Effects of Real and Nominal Uncertainty on Inflation and Output Growth Some GARCH-M Evidence”, *Journal of Applied Econometrics*, Vol.15, (2000), pp.45-58.
- GRIMES, A. “The Effects of Inflation on Growth Some International Evidence”, *Weltwirtschaftliches Archiv*, (1991), pp.631-644.
- GUJARATI, Damodar N. “Basic Econometrics”, Translated by Ümit and Gülay G. ŞENESEN, 1st Edition, Literatür Publications, Istanbul, 1999.
- GYLFASON, Thorvaldur “Principle of Economic Growth”, Oxford University Press, Oxford, 1999.
- GYLFASON, Thorvaldur and HERBERTSSON, Tryggvi T. “Does Inflation Matter for Growth?”, *Japan and the World Economy*, Vol.13, Issue 4, (December 2001), pp.405-428.
- HARRIS, N. Mark GILLMAN, Max and MATYAs, Laszl “The Negative Inflation-Growth Effect Theory and Evidence”, Melbourne Institute Working Paper, No. 12/01, (November 2001), pp.1-38.
- HASLAG, Joseph “Output, Growth, Welfare, and Inflation a Survey”, Federal Reserve Bank of Dallas, (1997), pp.1119

- .<http://ideas.repec.org/a/fip/fedder/y1997iqiip11-21.html>" \1 related#related" [Accessed September, 10, 2004].
- HEYLEN, Freddy DOBBELAERE, Ludovic SCHOLLAERT, Arne "Inflation, Capital Capital and Long-Run Growth an Emprical Analysis", Working Paper, No. 116, (October 2001), pp.1-15.
- HOLMES, Mark J. "The Output-Inflation Trade-off in African Less Developed Countries", *Journal of Economic Development*, Vol.25 No. 1,(June 2000), pp.41-55.
- HONDROYIANNIS, George and PAPANETROU, Evangelia, "Temporal Causality and the Inflation-Productivity Relationship Evidence from Eight Low Inflation OECD Countries", *International Review of Economic and Finance*, No. 7 (1), (1998), pp.117- 135.
- HSIAO, Cheng "Causality Tests in Econometrics", *Journal of Economic Dynamics and Control*, (1979), pp.321-346.
- HSIAO, Cheng "Autoregressive Modeling and Money Income Causality Detection", *Journal of Monetary Economics*, Vol.7, (January 1981), pp.85-106.
- İNSEL, Aysu "Relationships Between Indicators and Inflation Analysis in the Turkish Economy", *Journal of Business and Finance*, Issue 182, (May 2001), pp.43-59.
- JORDAN, Thomas J. "Central Bank Independence and the Sacrifice Ratio", *European Journal of Political Economy*, Vol.15, (1999), pp.229-255.
- JUDSON, Ruth and ORPHANIDES, Athanasios "Inflation, Volatility and Growth", *International Finance*, Vol.2, Issue 1, (1999), pp.117-138.
- JUDSON, Ruth and ORPHANIDES, Athanasios "Inflation, Volatility and Growth", *Finance and Economics Discussion Paper*, No. 96-19 (Washington Board of Governors of the Federal Reserve System), (1996).
- KADILAR, Cem and ERDEMİR, Cenap "Statistical Criteria Used in Selecting the Degree of Vector Autoregression Models",

- Uludağ University Journal of UBF, Vol.18, No. 12 (April 2000), pp.1-10.
- KAHN, George A. "Symposium Summary", (<http://www.kc.frb.org/PUBLICAT/SYMPOS/1996/pdf/s96sumry.pdf>) [Accessed September 6, 2004].
- KARACA, Orhan "Time Series Analysis of the Inflation-Growth Relationship in Türkiye", Doğuş University Journal, Vol. 4, No. 2, (July 2003), pp. 247-255.
- KHAN, Mohsin S. "Inflation, Financial Deepening, and Economic Growth", Financial Markets and Economic Development, (November 2002), pp. 12-13.
- KHAN, Mohsin S. SENHADn, Abdelhak S. "Threshold Effects in the Relationship Between Inflation and Growth", IMF Staff Papers, Vol. 48, No. 1, (2001), pp.1-21.
- KHAN, Mohsin S. "Inflation, Financial Deepening, and Economic Growth", (November 2002).
/SiteBanxicoIngles/gPublicaciones/seminarios/ing/dgie/estamacromer/Inflation.pdf [Accessed September 10, 2004].
- KALKAN, M. "The Long-Term Cost of Growth in Inflation", Ankara University Social Sciences Institute Master's Thesis, (1999).
- KİBRİTÇİOĞLU, Aykut KİBRİTÇİOĞLU, Bengi "Inflationary Effects of Crude Oil and Fuel Product Price Increases in Türkiye", Treasury Undersecretariat, No 21, (April 1999).
- KİBRİTÇİOĞLU, Aykut "Fuel Price Increases in Türkiye and Their Possible Effects on the 2001-2002 Anti-Inflation Program Effects", Journal of Economics, Business and Finance, 16, No.184, pp.31-41.
- KIRMANOĞLU, Hasan "Is there Inflation-Growth Trade off in the Turkish Economy", (2001).
(<http://www.econ.queensu.ca/cea2001/papers/kirmanoglu.pdf>) [Accessed September 6, 2004].
- KIZILYALLI, Hüsnü "Causes of Inflation in Türkiye: Inflation Could Have Been Eliminated Effortlessly and Without Burden

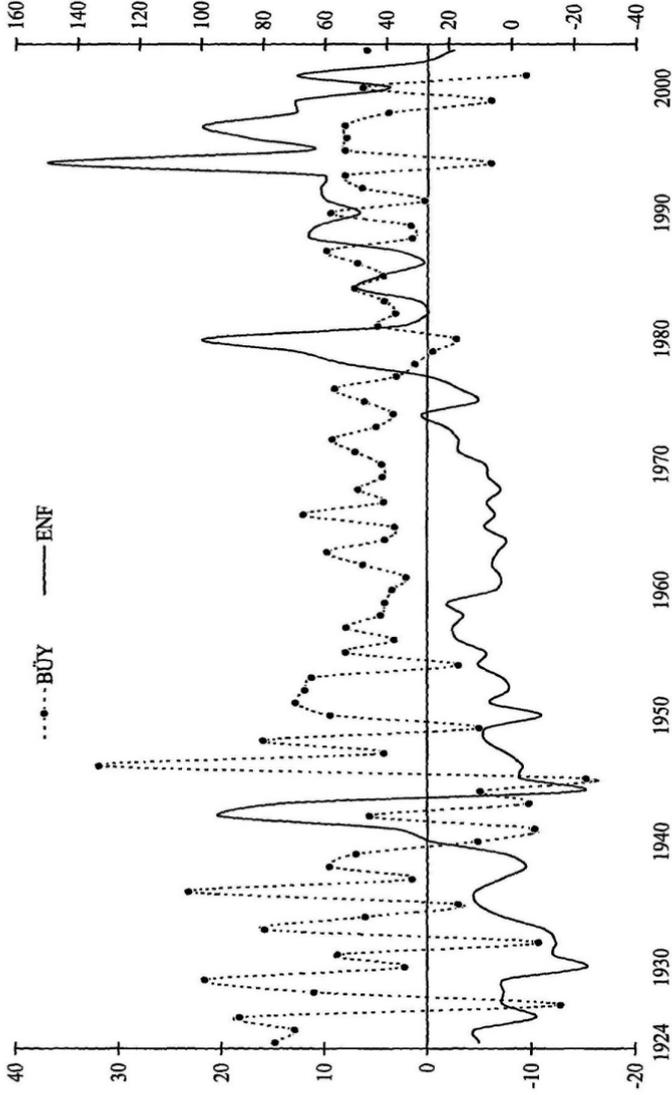
- in 1997 and 1998”, *Journal of Economics, Business and Finance*, No. 165, (1999), pp.6-10. KLUMP, Rainer “Inflation, Factor Substitution and Growth”, Working Paper, No. 280, (October 2003), pp.9-27.
- KORAY, Faik “Inflation Variability and the Turkish Economy”, *Applied Economics*, 23, (1993), pp.787-793.
- KORMENDI, Roger C. and MEGUIRE, Philip G. “Macroeconomic Determinants of Growth Cross-Country Evidence”, *Journal of Monetary Economics*, No. 16(2), (September 1985), pp.141-163.
- LEITEMO, Kai and ROSTE, Ole B. “Measuring the Sacrifice Ratio Some International Evidence”, (October 2003). <http://www.economics.no/sacrifice.pdf>. [Accessed September, 10, 2004].
- LEVIENE, ROSS and RENELT, David “A Sensitivity Analysis of Cross-Country Growth Regressions”, *American Economic Review*, No.82 (September 1992), pp. 942-963.
- LEYİNE, Ross and ZERVOS, Sara J. “Looking at the Facts What We Know About Policy and Growth from Cross-Country Analysis”, World Bank Policy Research Working Paper, No. 1115, (Washington World Bank), 1993.
- MA, Henry “Inflation, Uncertainty, and Growth in Colombia”, IMF Working Paper, No. 161, (1998), pp.1-30.
- MALİK, Girijasankar CHOWDHURY, Anis “Inflation and Economic Growth Evidence from Four South Asian Countries”, *Asia Pacific Development Journal*, Vol.8, No. 1, (June 2001), pp.123-133.
- TEXT, Kivılcım “An Integrated Analysis of Turkish Inflation”, *Oxford Bulletin of Economics and Statistics*, No. 57 (4), (1995), pp.513-531.
- MOTLEY, Brian “Growth and Inflation a Cross-Country Study”, Federal Reserve Bank of San Francisco Working Paper, No. 93-11, (September 1993), pp.1-31.
- NEELY, Christopher J. WALLER, Christopher J. “A Benefit Cost Analysis of Disinflation”, Federal Reserve Bank of St.Louis,

- (August 1996), pp.1- 19.<http://research.stlouisfed.org/econ/cneely/sacrat.pdf>{Accessed September, 16, 2004}.
- OLTULULAR, Sabiha “Inflation and Output Trade-off in Türkiye: An Econometric Study”, (2005) Karadeniz Technical University, Institute of Social Sciences, Master’s Thesis, Trabzon, Türkiye.
- ÖGÜT, Kaan “The Future of the Turkish Economy in the Stability-Growth Dilemma”, http://aydinlanmal923.org/50/50_060GUT.pdf [Accessed September 10, 2004].
- ÖNİŞ, Ziya ÖZMUCUR, Süleyman “Exchange Rates, Inflation and Money Supply in Türkiye: Testing the Vicious Circle Hypothesis”, *Journal of Development Economics*, No. 32 (1), (1990), pp.133-154.
- PARASIZ, İlker (2000) “Fundamentals of Modern Macroeconomics”, Ezgi Publications, Bursa. PARASIZ, İlker (1998) “The Turkish Economy from to the Present Economics and Stabilization Policies”, Ezgi Publications, Bursa.
- PAYA, Merih “Macroeconomics”, Filiz Publications, Istanbul, 2001.
- PAYA, Merih (1998) “The Turkish Economy from 1923 to the Present Economics and Stabilization Policies”, Ezgi Publications, Bursa.
- PAYA, Merih “Monetary Theory and Monetary Policy”, Filiz Publications, Istanbul, 2002.
- PHILLIPS, Alban W. H. “The Relation Between Unemployment and the Rate of Change of Money Wage Rates in the United Kingdom, 1861-1957”, *Economica*, Vol.25, (November 1958).
- PHILLIPS, Peter C. B. and PERON, Pierre “Testing for a Unit Root in Time Series Regression”, *Biometrika*, Vol.75, (1988), pp.335-346.
- RAM, Rati “Further International Evidence on Inflation Output Trade-off”, *Canadian Journal of Economics*, No. 17, (1984), pp.523-540.

- SAREL, Michael “Nonlinear Effects of Inflation on Economic Growth”, Staff Papers, International Monetary Fund, Vol.43, No. 1, (March 1996), pp.199-215.
- SELODY, Jack “The Goal of Price Stability a Review of the Issues”, Technical Report 54, Bank of Canada, Ottawa, (May 1990).
- SHRESTHA, Keshab CHEN, Sheng-Syan and LEE, Cheng-Few “Are Expected Inflation Rate and Expected Real Rates Negatively Correlated? a Long-Run Test of the Mundell-Tobin Hypothesis”, The Journal of Financial Research, Vol.25, No. 3, (2002), pp.305- 320.
- SIMONSEN, Mario H. and CYSNE, Rubens P. “Welfare Cost of Inflation the Case for Interesting Bearing Money and Empirical Estimates for Brazil”, Proceedings of the 1994 Annual Meeting of the Brazilian Econometric Society, No. 245, pp. 197-220.
- SIMS, Christopher A. “Macroeconomics and Reality”, *Econometrica*, Vol.48, (1980), pp.1-48.
- SINGH, Kanhaiya and KALIRAJAN, Kaliappa “The Inflation-Growth Nexus in India an Empirical Analysis”, *Journal of Policy Modeling*, (January 2003), pp.377-396.
- SMYTH, David J. “Inflation and Growth in the United States’ Natural Output”, *Applied Economics*, No. 24, (1992), pp.567-570.
- SMYTH, David J. “Inflation and Growth”, *Journal of Macroeconomics*, No. 16, (1994), pp.261-270.
- SMYTH, David J. “Inflation and Total Factor Productivity in Germany”, *Weltwirtschaftliches Archiv*, No. 131, (1995), pp.403-405.
- STEINDL; Frank S. “On the Inflation-Bacillus and Economic Growth”, Oklahoma State University, (http://cba.okstate.edu/steindl/working_papers.pdf)[Accessed Sep. 6, 2004].
- STOCKMAN, Alan C. “Anticipated Inflation and the Capital Stock in a Cash-in-Advance Economy”, *Journal of Monetary Economics*, No. 8, (November 1981), pp.387-393.

- ŞIKLAR, Emel “Cointegration Analysis and Money Demand in Türkiye”, T.R. Anadolu University Publications, No. 13, Eskişehir, 2000.
- TAGHAVI, Majid “Debt, Growth and Inflation in Large European Economies a Vector Auto-Regression Analysis”, Journal of Evolutionary Economics, (2000), No. 10, pp.159-173.
- TEMPLE, Jonathan “Inflation and Growth Stories Short and Tall”, Journal of Economic Surveys, Vol.14, No. 4, (2000), pp.395-426.
- TERZİ, Harun and ZENGİN, Hilmi “In Türkiye “A Study on the Causality Relationship Between Exchange Rate and Inflation”, Marmara University Statistics and Econometrics Research and Application Center Journal, Issue 1, (1996), pp.3-15.
- TERZİ, Harun and OLTULULAR, Sabiha “An Econometric Analysis of the Economic Growth-Inflation Process in Türkiye by Sectors”, Turkish Banks Association, Issue 50, (September 2004), pp.19-33.
- TERZİ, Harun and OLTULULAR, Sabiha “The Relationship Between Inflation and Economic Growth in the Short and Long Term in Türkiye”, Turkish Economics Congress, (May 2004).
- TOBIN, James. “Money and Economic Growth”, *Econometrica*, Vol.33, Issue 4, (1965), pp.671-684.
- TUNAY, Batu K. “Estimation of the Sacrifice Rate of the Stabilization Process in Türkiye Using the SVAR Method”, Marmara University Journal of Social Sciences Institute, Issue 20, (June 2003), pp.163-171.
- TÜSİAD “Inflation and Growth Dynamics: An Analysis of Türkiye in Light of Developing Country Experiences”, Publication no. TÜSİAD-T/2002-12/341, (December 2002), Istanbul.
- ULUSOY, Ahmet “Fiscal Policy”, Derya Publishing House, Trabzon, 1999.

- VALDOVINOS, Carlos G. “Inflation and Growth in the Long Run”, *Economics Letters*, Vol. 80, Issue 2, (2003), pp.167-173. WALTER, Enders *Applied Econometric Time Series*, Wiley, 1995.
- YALÇIN, C. “Price-cost Margins in the Turkish Manufacturing Industry”, Unpublished study, Central Bank of Türkiye Research Directorate General, (1999) Available from <http://www.tcmb.gov.tr>
- YAY, Gülsün G. “The Costs of Inflation Reduction Policies: Theory, Application and Türkiye”, *Journal of Economics, Business and Finance*, No: 184, (July 2001), pp. 66-83.
- YILMAZ, Kamil AKÇAY, Cevdet ALPER, Emre “Inflation and Growth Dynamics: An Analysis of Türkiye in Light of Developing Country Experiences”, TÜSİAD Publications, No. (2002) <http://www.tusiad.org/turkish/rapor/fahiliye2002/3.pdf>
- ZHANG, Lawrence H. “Sacrifice Ratios with Long-Lived Effects”, Department of Economics The Johns Hopkins University, (April 2001), pp.1-35. /pdf/papers/all_4202001.pdf [Accessed, September 10, 2004].

Appendices:**Figure 1: Inflation and economic growth: 1924-2003**

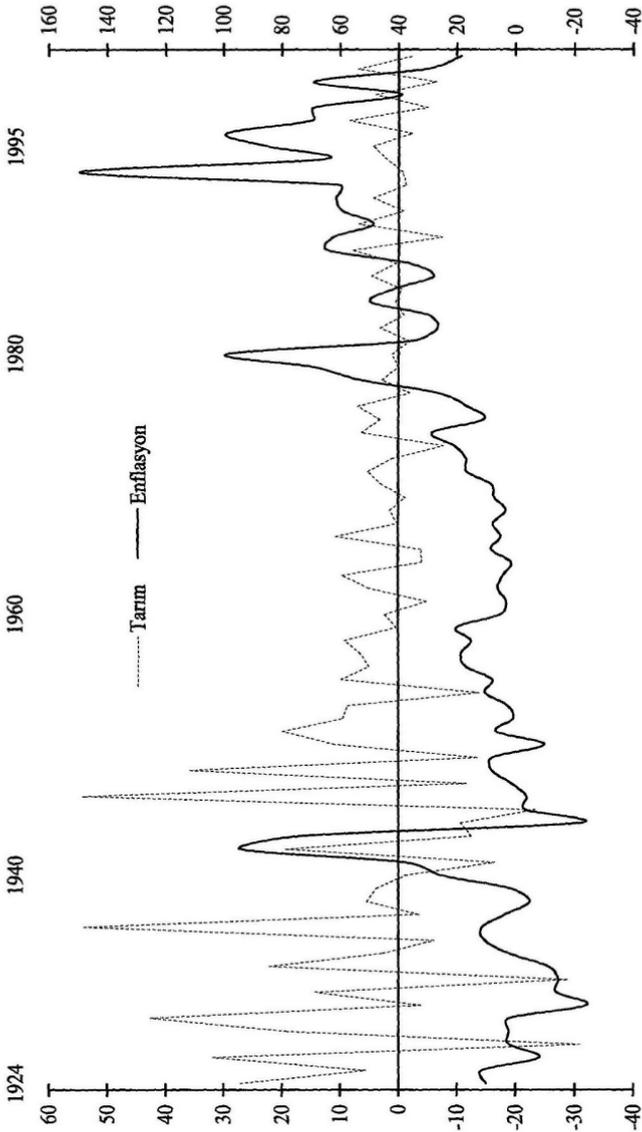


Figure 2: Relationship between inflation and the agricultural sector:
1924-2003

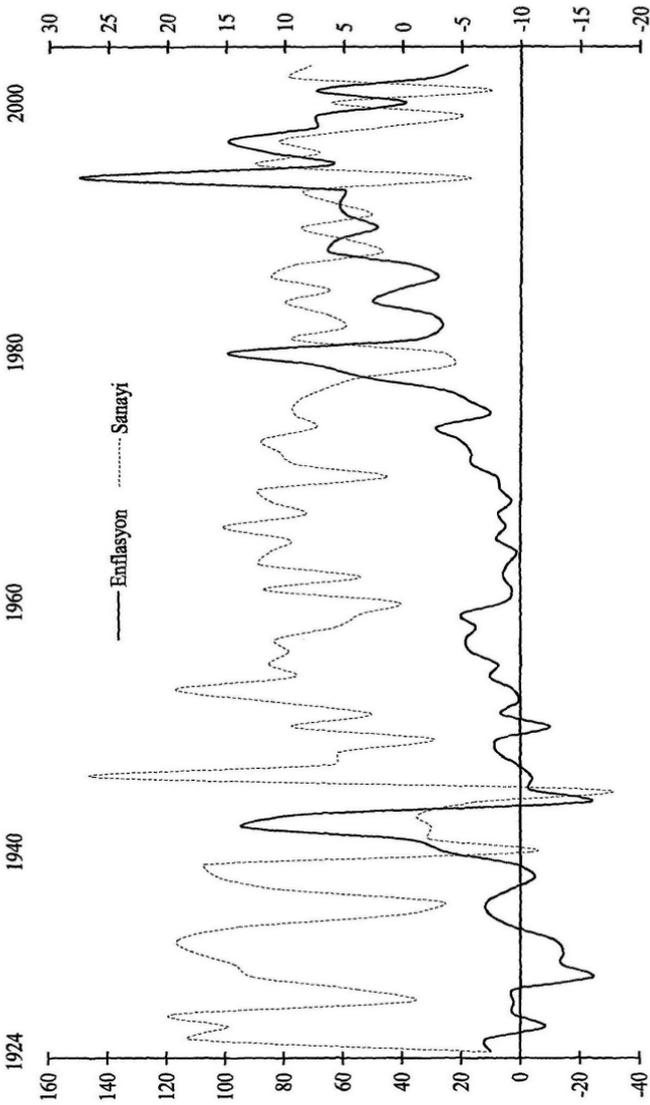


Figure 3: Relationship between inflation and the industrial sector:
1924-2003

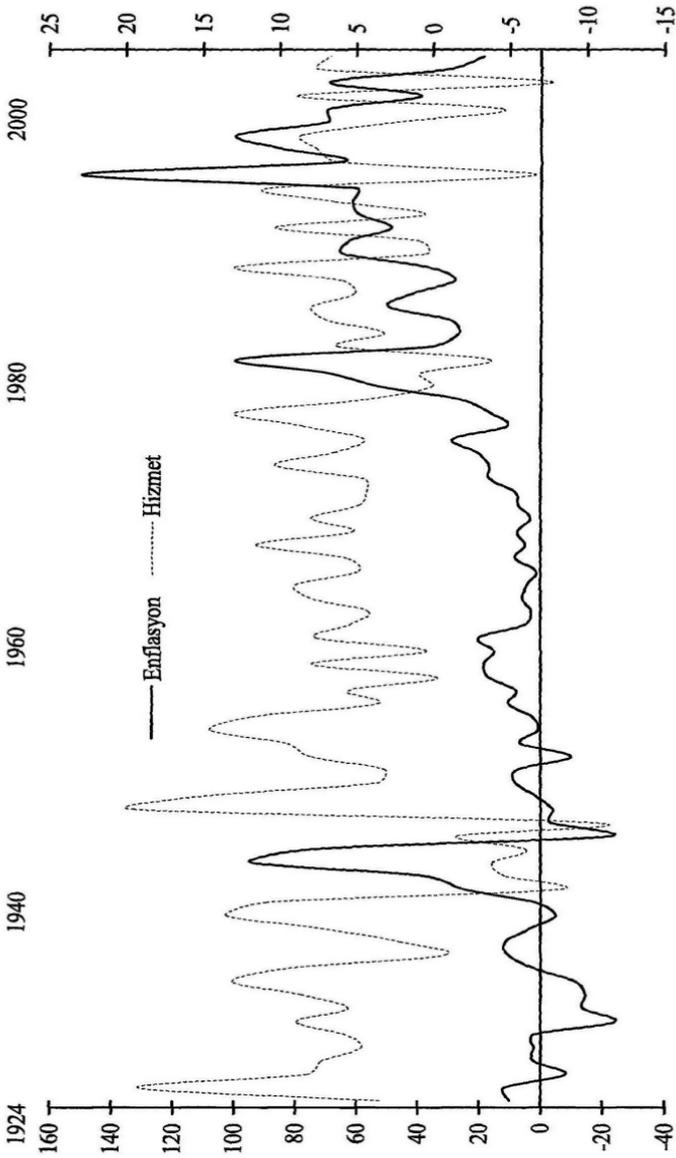


Figure 4: Inflation-Service Sector Relationship: 1924-2003 Period

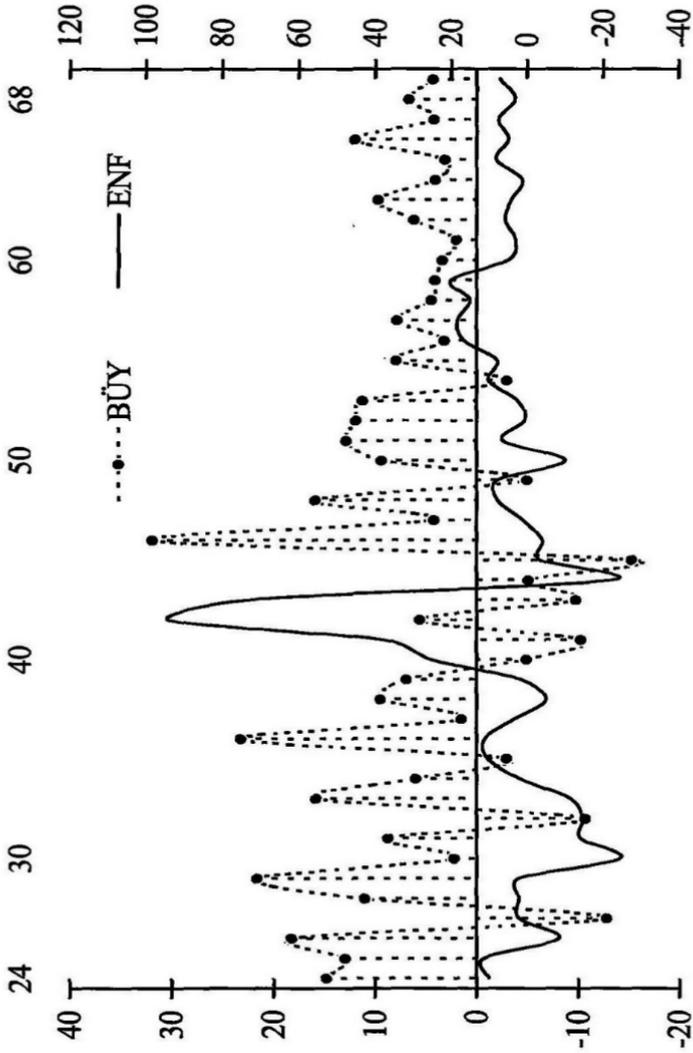


Figure 5: Inflation and Economic Growth: 1924-1969

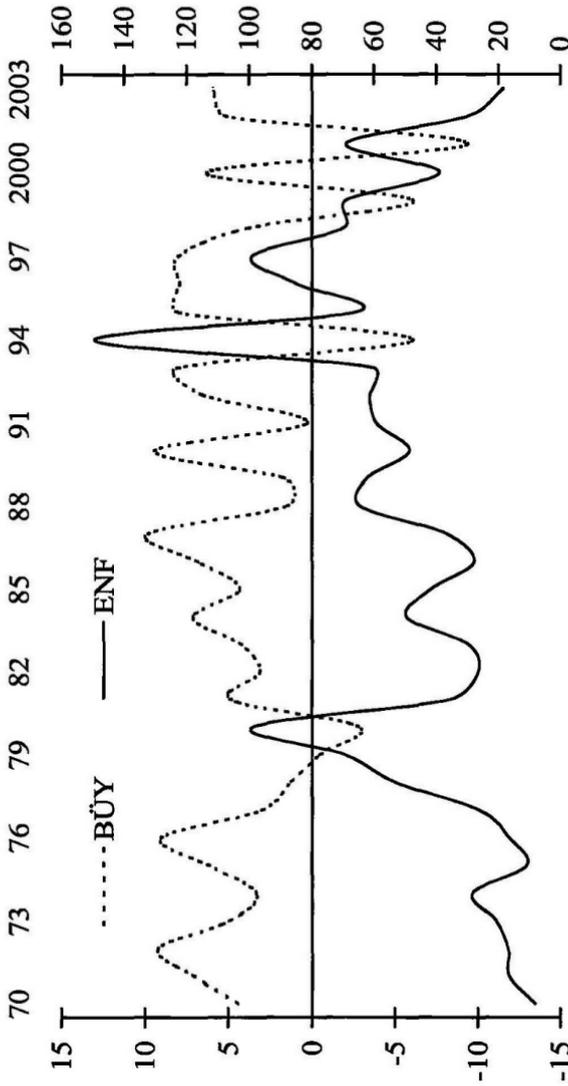


Figure 6: Inflation and Economic Growth: 1970-2003

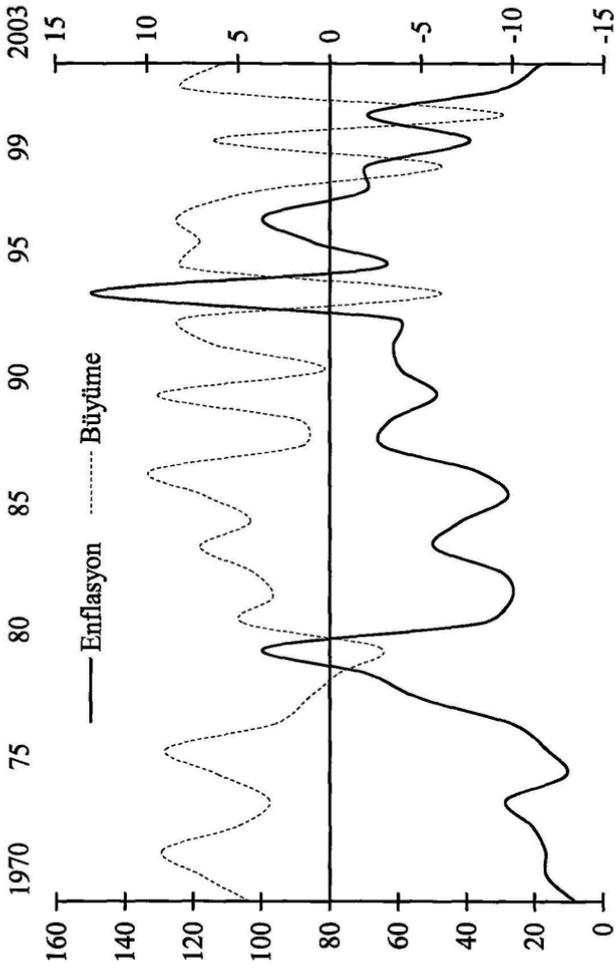


Figure 7: Inflation-Growth Trend: 1970-2003

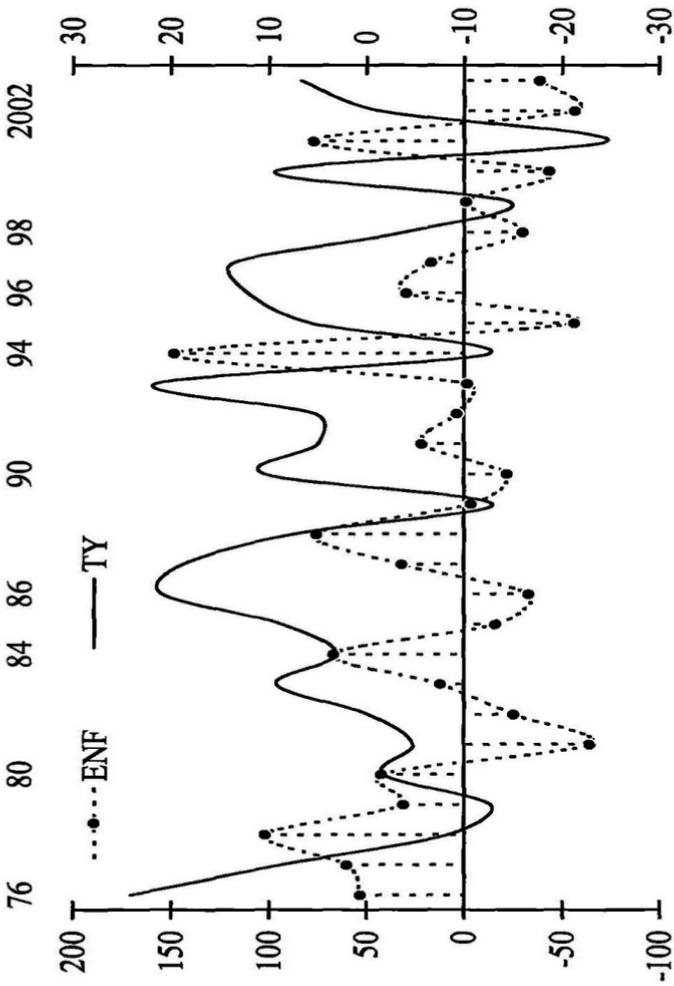


Figure 8: Relationship between inflation and total fixed capital investment expenditure

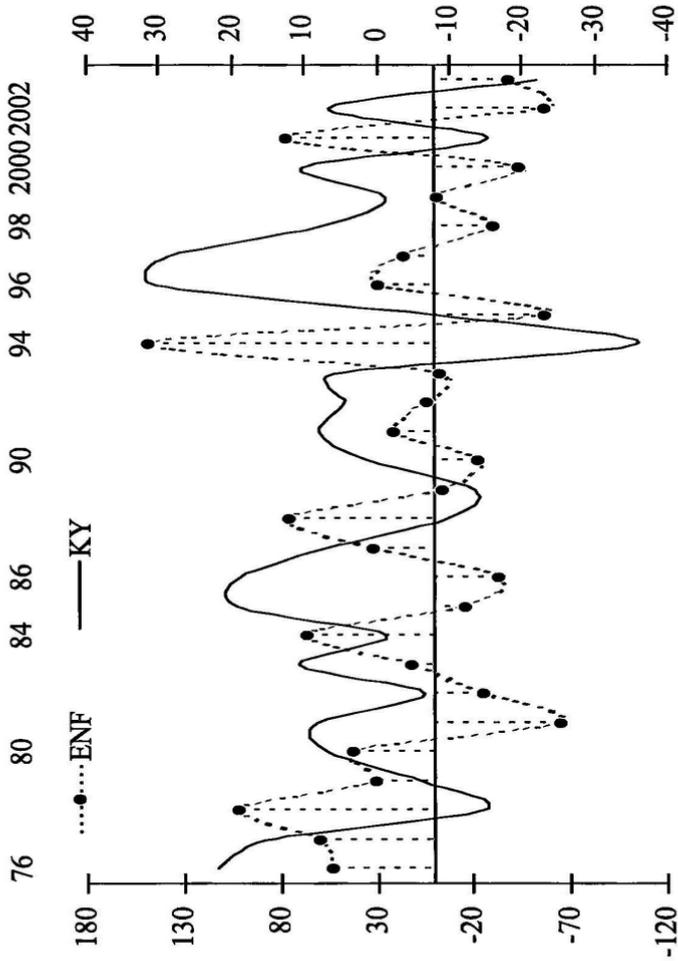


Figure 9: Relationship between inflation and government fixed capital investment expenditure

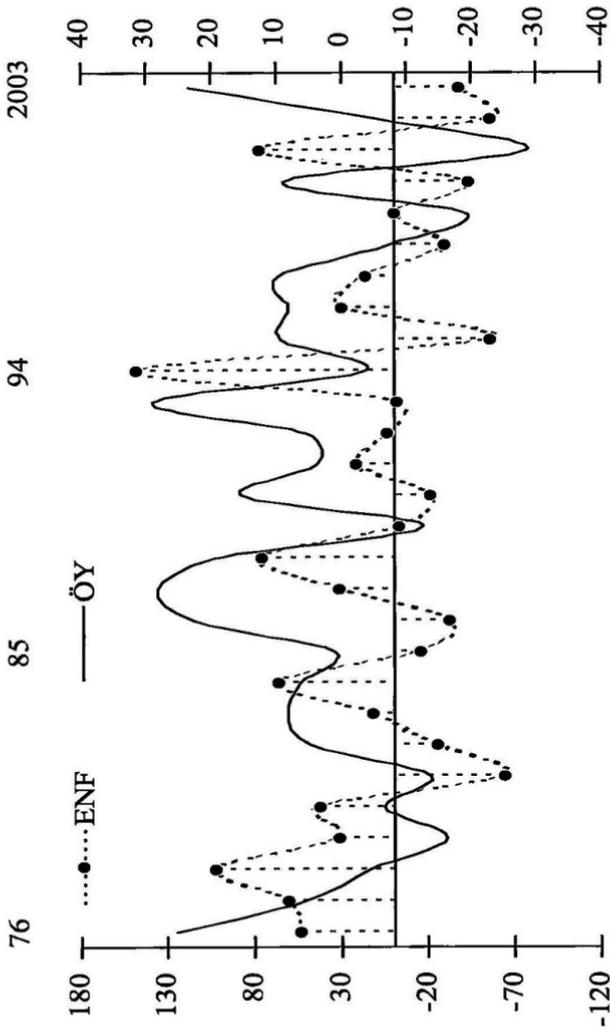


Figure 10: Relationship between inflation and private fixed capital expenditure

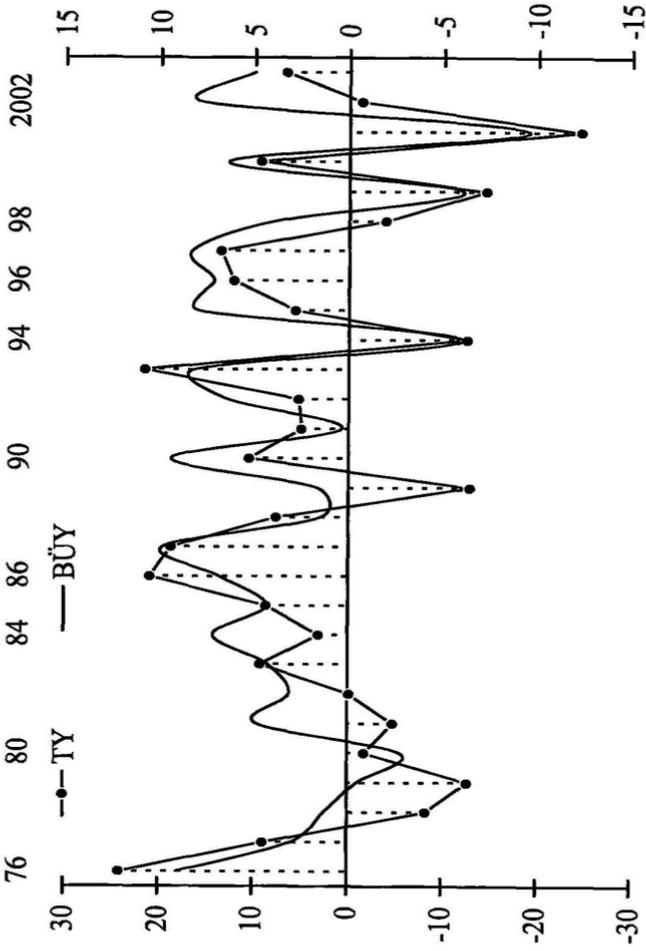


Figure 11: Relationship between economic growth and total fixed capital expenditure

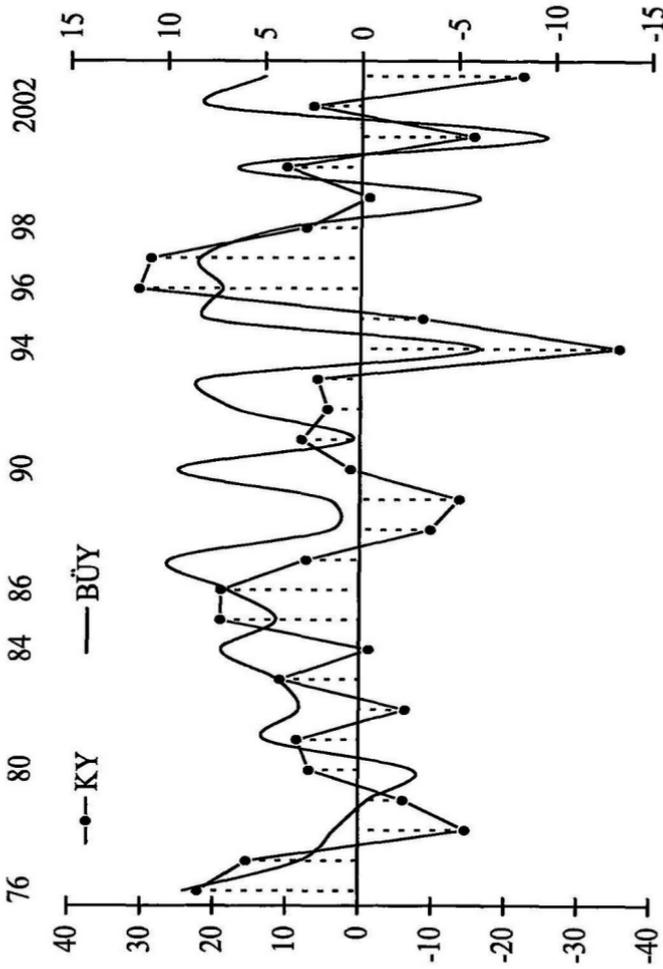


Figure 12: Relationship between economic growth and public fixed capital investment expenditure

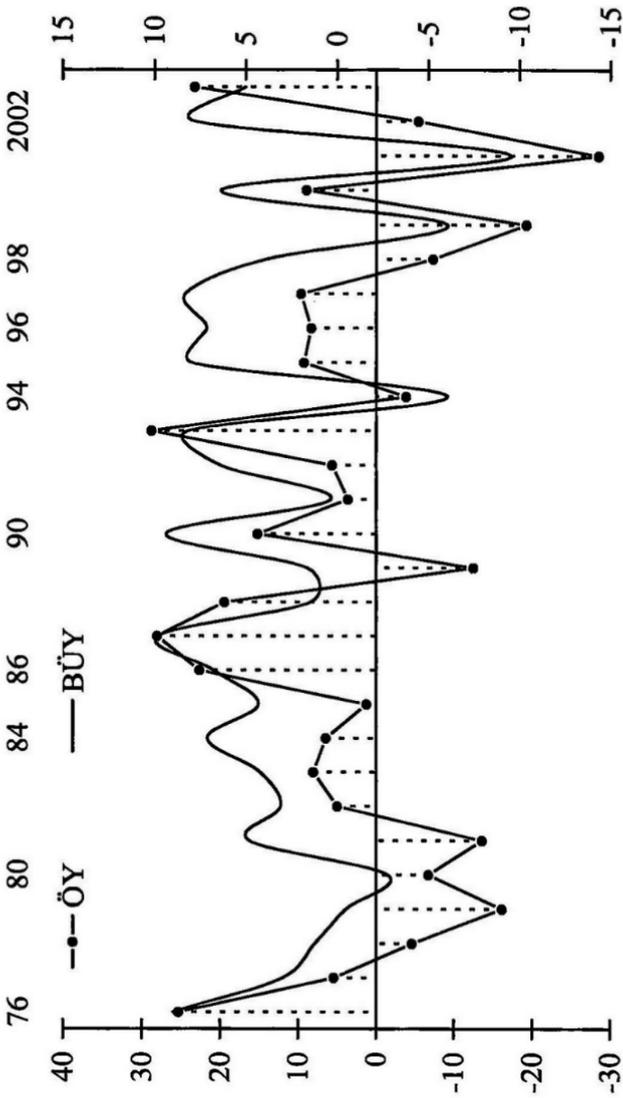


Figure 13: Relationship between economic growth and private fixed capital investment expenditure

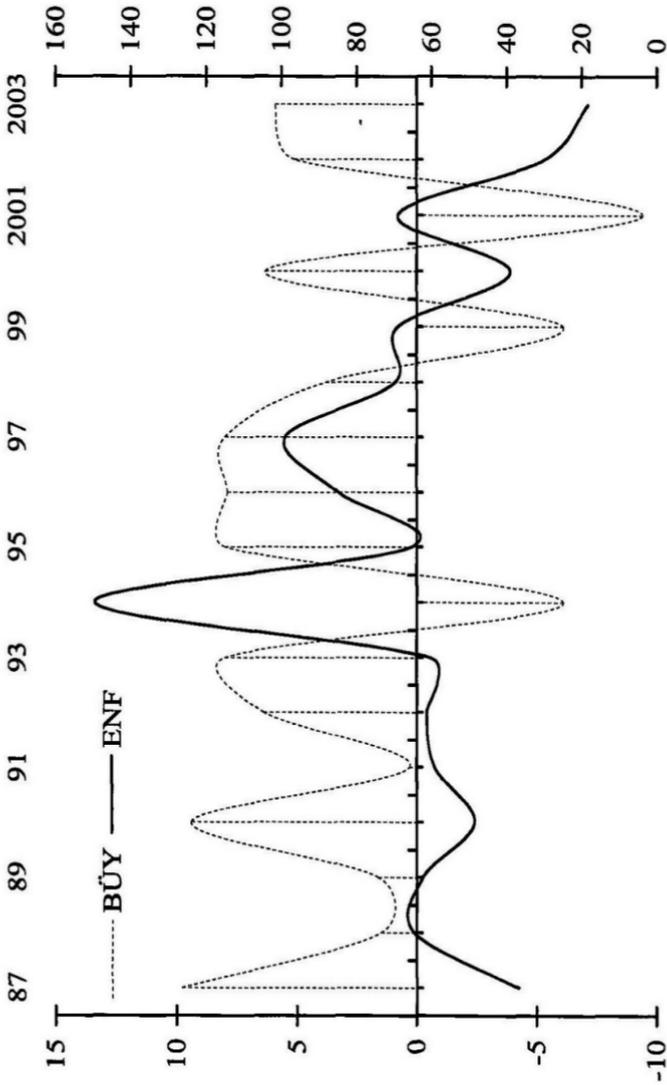


Figure 14: Inflation and economic growth: 1987-2003