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RESEARCH ARTICLE

Decoding Inflation: Role of Institutional Quality in Türkiye Using Advanced Econometric Techniques

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ABSTRACT

Persistent inflation remains a significant economic challenge in Türkiye. The causes of high inflation have been examined through various factors, including supply and demand, as well as monetary and fiscal policies. However, few studies have included institutional factors in their analyses. The objective of this study is to determine whether institutional quality affects inflation in Türkiye. A novel and robust econometric analysis method is employed in this study. Between 2005 and 2019, the inflation rate, the International Country Risk Guide's (ICRG) Political Risk Rating index, which measures the quality of institutional structure, and the changes in currency exchange rate basket variables in Türkiye were examined using the Fourier KPSS stationarity test and the Fourier Shin cointegration test. The results of the analysis indicate that inflation rate is co-integrated with institutional quality. The deterioration of institutional quality in Türkiye between 2005 and 2019 has been associated with an increase in inflation. While the implicit inflation targeting period in the inflation targeting regime implemented in Türkiye after 2002 was relatively successful, the explicit inflation targeting period failed to reduce inflation. The primary reason for the inability to achieve the specified inflation targets during these periods is the deterioration in the quality of institutions. It is also important to note that central bank independence is not immune to political influence and is one of the most important factors affecting inflation targeting.

Keywords: Institutional structure, Inflation, Inflation-targeting, Central bank, Fourier analysis
JEL Classification: D02, E31, E58

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1. Introduction

The structural and economic institutions of private property, the rule of law, political stability, and investment protection play a pivotal role in fostering economic growth and development (Acemoğlu, Johnson and Robinson, 2005). In countries with weak institutional structures, fluctuations in macroeconomic variables occur through both microeconomic and macroeconomic channels. An enhanced institutional structure exerts a robust positive influence on macroeconomic stability, including growth and low inflation (Acemoglu et al., 2003; Barro and Sala-i Martin, 2004).

Inflation gives rise to significant social and political complications within societies. For this reason, the determinants of inflation have constituted a central focus of extensive economic literature research, with the objective of providing policymakers with guidance in their decision-making processes. Nevertheless, a significant proportion of these studies tend to analyse monetary policies and indicators without incorporating the role of institutions. In the economic literature, macroeconomic instability has been attributed to purely economic arguments, and monetary and fiscal policies are considered the main tools to achieve macroeconomic stability and control inflation (Fenira, 2014; Minea, Tapsoba and Villieu, 2021, p. 2108). In essence, inflation has long been considered a predominantly monetary phenomenon in the long run (Friedman, 1963). However, recent contributions from post-Keynesian-structuralist economists underscore the significance of supply-side factors in triggering inflationary processes. These factors include exchange rate shocks, import and commodity price increases, and wage fluctuations in non-tradable sectors (Abeles and Panigo, 2015).

Conversely, recent studies have investigated the effects of institutional factors on inflation (Cukierman, 1992). The general conclusion of these studies, which take institutions into account in the literature, is that the emergence and rise of inflation is due to the lack of central bank (CB) independence, weak financial structure, and underdevelopment of democratic institutions. Furthermore, the

pace and quality of economic growth are additional factors that influence inflation (Lim, 2021, p. 310; Khan and Hanif, 2020, pp. 628-629). Moreover, the institutional structure can affect inflation through various channels, including property rights, the rule of law, the enforceability of contracts, and political stability (Knack and Keefer, 1995).

CBs are crucial institutions within economic structures that are tasked with reducing and controlling inflation. The primary CB objective is to ensure price stability[1]. Clearly defining the role of the CB is essential for mitigating market failures. When CBs have the capacity to analyze comprehensive market information, they can make more effective decisions. The first notable example of this is New Zealand. The implementation of an inflation targeting regime in New Zealand resulted in a reduction in inflation, a precedent followed by other countries (Mishkin and Posen, 1998). For an inflation targeting regime to be effective, it is essential that the CB operates independently, free from political pressure, in selecting and implementing monetary policy tools. The credibility, transparency and autonomy of the CB are crucial prerequisites for achieving sustained inflation reduction (Aguir, 2018).

Furthermore, the quality of institutions plays a pivotal role in determining the autonomy of CBs and the efficacy of monetary policy. When institutional quality is deficient, there is an elevated risk of CBs being exploited by governments for monetization. This vulnerability is particularly evident during election cycles when expansive monetary and fiscal policies are often pursued to stimulate economic growth and reduce unemployment. The delayed effects of monetary policy on inflation, resulting from fiscal choices, become noticeable following elections (Leeper, 1991; Alesina, Cohen and Roubini, 1993). However, with CB independence, effective measures, such as interest rate adjustments, can be implemented to curb demand in an overheated economy without succumbing to political pressure. This makes it more feasible to achieve inflation targets.

[1] https://www.tcmb.gov.tr/wps/wcm/connect/TR/TCMB+TR/Main+Menu/Temel+Faaliyetler/Para+Politikasi/Fiyat+Istikrari+ve+Enflasyon/#:~:text=Fiyat%20istikrar%C4%B1%20ise%20para%20politikas%C4%B1n%C4%B1n,temel%20amac%C4%B1%2C%20fiyat%20istikrar%C4%B1n%C4%B1%20sa%C4%9Flamakt%C4%B1r. – Access date: 09.03.2023

Nevertheless, it is evident that policymakers often prioritize economic growth over inflation control. For example, the national electoral policies of Türkiye from 2004 to 2016 were based on promoting economic growth (Luca, 2022).

On the other hand, a lack of institutional quality erodes credibility, increases risk premiums, and causes inflation to rise through exchange rate depreciation, leading to deviations from the target and making it challenging for policymakers to manage inflation expectations (Samadi, Marzban and Owjimehr, 2017, p. 33). Acemoğlu et al. (2008) expanded upon this perspective, noting that in countries with weak institutional structures, politicians, if not constrained, CB independence alone is insufficient to reduce inflation. Consequently, the promotion of institutional reforms (such as the separation of powers, accountability, etc.) in developing countries becomes a pressing necessity with the objective of enhancing economic performance, which would result in more consistent monetary policy, a deeper financial sector, and reduced monetary shocks (Posen, 1995, p. 270). Furthermore, Acemoğlu et al. (2008) demonstrated that countries with strong institutional structures can regulate inflation even in the absence of robust CB independence through the implementation of appropriate policies, thereby underscoring the correlation between institutional quality and inflation levels. This mechanism is exemplified by the rapid decline in inflation in Türkiye following its institutional transformation after 2001 (Kara and Öğünç, 2008, pp. 60-62). However, the reduction in the tenure of the governors of the Central Bank of the Republic of Türkiye (CBRT) suggests a decline in the CBRT's independence[2] and a deviation from the inflation target. Moreover, controlling inflation has the additional benefit of increasing the efficiency of investment decisions and reducing the volatility of interest rates and risk premiums, which significantly improves economic performance beyond expectations (Gürkaynak et al., 2007). Therefore, a detailed study of this issue is crucial for both developed and developing countries to improve economic indicators such as economic growth, employment, foreign trade, and income distribution.

[2] Demiralp (2022, October) - https://istanpol.org/post-merkez-bankasi-bag-ms-zl-ve-turkiye-tecr-besi - Access date: 09.03.2023

Conversely, studies have indicated that institutional quality is not a significant factor in disinflation. For instance, Aisen and Veiga (2008a) argued that institutional quality does not play a pivotal role in explaining inflation performance, citing high levels of political instability as contributing to more volatile inflation rates. Lin and Ye (2009) further suggest that the success of inflation targeting in developing countries is influenced by a number of factors, including the government's fiscal condition, the CB's desire to limit exchange rate movements, the fulfilment of prerequisites for policy adoption, and the time elapsed since policy adoption. These studies highlight that the success of inflation targeting is contingent upon a range of country-specific factors that extend beyond the institutional quality of the economy.

These studies demonstrate that countries with comparable levels of institutional quality may experience varying inflation rates despite implementing similar inflation targeting strategies. This indicates that factors such as political stability and macroeconomic policies also significantly influence the effectiveness of inflation targeting. Consequently, the relationship between institutional quality and inflation reduction is intricate and contingent on numerous variables. In this context, Samarina and De Haan (2014) proposed that past macroeconomic performance, fiscal discipline, exchange rate arrangements, and the structure and development of the financial system are crucial in adopting an inflation targeting regime within a country. An examination of these findings in the context of Türkiye is crucial to understanding their applicability within the country's unique conditions and economic framework. This will aid in the devising of more effective strategies for designing and implementing inflation management policies.

This study empirically examines the relationship between institutional quality and inflation in Türkiye. This study addresses a gap in the existing literature on this topic in the Turkish context, where few studies have been conducted on the subject. The discussion expands to consider whether inflation is merely a monetary phenomenon by integrating a New Institutional Economics (NIE) perspective. NIE underscores the critical role that institutional structures play in facilitating the effective functioning of public services. It elucidates how

inadequate legal frameworks can lead to incomplete contracts, engendering challenges in economic institutions that are influenced by both de facto and de jure political institutions. These challenges can give rise to market failures, which have a negative impact on economic indicators and can hinder macroeconomic stability (Çiçen, 2017). NIE underscores the significance of independent regulatory authorities in maintaining reliable commitments during policymaking (North, 1993). In light of these considerations, the quality of institutional structure and independence of CBs emerge as crucial factors. An understanding of these dynamics is essential for a thorough examination of the interaction between institutional factors and inflation rates, which contributes substantially to both academic discussion and policy recommendations in the context of the Turkish economy.

The second section examines the relationship between institutional structure and inflation, with a particular focus on inflation targeting and the distinctions between developed and developing countries. A subsection of this section presents a detailed analysis of the Turkish case. The third section offers an extensive review of the existing literature in this field. The fourth section presents the fundamental economic model that serves as the foundation for the study. Subsequently, Section 5 provides a detailed account of the econometric methodology employed, including Fourier stationary and cointegration tests. In the sixth and the final section, the data used and the resulting findings are presented, and the study's empirical contributions are encapsulated. The conclusion section then synthesizes these findings and offers pertinent policy recommendations.

2. Quality of Institutional Structure and Inflation

The marked differences in economic structure and institutional frameworks between developed and developing countries are an important factor in the formulation and implementation of economic policies. Advanced economies generally have strong legal infrastructures, efficient governance mechanisms, and deep financial structures. In contrast, emerging economies are often characterized

by weaker institutional structures. These countries tend to be influenced by international financial markets when determining their economic policies and have more endogenous vulnerability. Furthermore, developing countries are more susceptible to external economic shocks and are less equipped than developed countries to respond to such shocks. These disparities should be taken into account in research on inflation and the quality of institutions, particularly in economic analysis of developing countries. Given that structural institutions in developing countries are not as strong as in developed countries, financial and economic institutions remain weak, making it challenging to implement inflation targeting policies effectively (Ibarra and Trupkin, 2016).

Since the 1990s, Türkiye and other developing countries have implemented inflation targeting regimes. However, despite institutional reforms, these targets have not been met in most periods. This is because the success of inflation targeting in developing countries requires the elimination of political uncertainties as well as a number of conditions, including fiscal dominance, high dollarization, trade imbalances, and the absence of volatility in financial markets. However, for instance, developing countries have limited control over exchange rates. In addition, developing countries often have fewer reserves to manage monetary policy, which makes it challenging for them to respond effectively to changes in economic conditions and to stabilize the exchange rate (Aizenman, 2019). Moreover, a high level of dollarization devalues the local currency and affects the monetary policy of the CB, making inflation targeting more difficult. In this context, the macroeconomic performance of emerging markets is also important. In the periods of high global liquidity, the weaknesses accumulated in emerging markets through capital inflows can suddenly turn into a crisis (Borio and Disyatat, 2015, pp. 25-26). In addition to high dollarization and depreciation of the local currency during a crisis, inflation can be adversely affected by a combination of factors, including fluctuations in financial markets, increases in import costs, credit expansion, and demand growth through capital flows (Obstfeld and Zhou, 2023). For example, Argentina, a Latin American country, has recently faced high levels of inflation due to fiscal and monetary policies. The inflation targeting regime, which commenced in September 2016, was only sustained for 25 months. This was due

to two main factors. Firstly, in December 2017, a political dispute between the government and the Central Bank of Argentina (BCRA) led to a negative credibility shock, as the public perceived an intervention in the autonomy of the BCRA. Secondly, the currency crisis in April 2018 led to a significant devaluation of the Argentine peso, which in turn led to high inflation. Following these problems, the inflation targeting regime was terminated (Cachanosky and Mazza, 2021). In this context, it is insufficient to focus solely on economic measures for the success of the inflation targeting regime. In addition to economic measures, structural adjustments are also necessary. These include the creation of strong and accountable institutions, public administration reforms, and strengthening the legal framework. By combining all these elements, an integrated approach can provide a comprehensive solution.

2.1. Türkiye's Inflation Targeting Experience

In the 1990s, Türkiye experienced a prolonged period of inflationary pressures, which had a detrimental impact on the country's economic stability. The 1994 financial crisis resulted in a surge in the CPI, reaching 125.5%. As an external shock, the 1997 energy crisis contributed to an increase in inflation. The average CPI for the 1990s was 75.3%. Moreover, the 2000-2001 crisis led to a depreciation of the Turkish lira and a subsequent surge in inflation, which had declined to 39% in 2000 but rose rapidly to 68.5% in 2001. The primary drivers of elevated inflation in Türkiye during the 1990s were the time-inconsistent monetary policies implemented by coalitions, the high public debt and fiscal indiscipline, fluctuations in the exchange rate, and structural deficiencies (Özatay, 2015, p. 10).

In the aftermath of 2001 financial crisis in Türkiye, the coalition invited Kemal Derviş to visit the country to address the country's macroeconomic instability. As a result, the Strong Economy Transition Program (SET) was developed with the support of the International Monetary Fund (IMF), starting in April 2001. Following the early elections in November 2002, the program was continued by the Justice and Development Party (JDP) upon its coming to power. The program's

primary objectives were to achieve sustainable growth and reduce inflation. To achieve these goals, the SET framework established independent regulatory bodies and granted the CBRT autonomy. Legislation specified that the CBRT's primary objective was to ensure price stability. Furthermore, the CBRT's practice of financing deficits for the Treasury and other public institutions was legally terminated. Among the independent regulatory bodies established was the Banking Regulation and Supervision Agency (BRSA). The BRSA was established following bank bankruptcies during the 2000-2001 crisis with the objective of stabilizing the financial sector. CBRT and BRSA, working in coordination after 2001, made significant contributions to macroeconomic stability[3]. The Banking Restructuring Program, implemented under the SET, facilitated the restructuring of the banking sector and resolved deteriorating balance sheets and capital structures after 2001. This ensured that banks resumed their core functions rather than lending to the Treasury, thereby deepening the financial sector (Öniş, 2009, pp. 421-422). This development was of critical importance in reducing inflation because financial instability can significantly disrupt the transmission mechanism, potentially reducing the effectiveness of standard interest rate policies (Svensson, 2010, p. 1283).

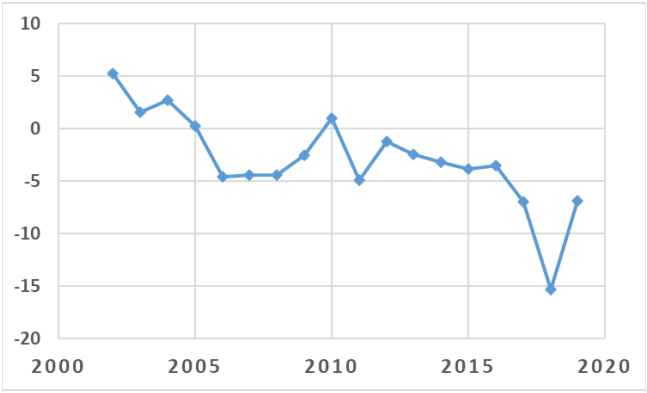
Following the attainment of autonomy, the CBRT initiated the implementation of inflation targeting regime in 2002. Between 2002 and 2005, an implicit inflation targeting was employed, followed by an explicit inflation targeting from 2006 to the present. The rationale behind the introduction of implicit inflation targeting was the necessity to reduce initially high inflation rates to a specific level (below 15%). In 2002, Türkiye's inflation rate was 29.7%, which decreased to 18.4% in 2003. After falling below 10% in 2005, Türkiye transitioned to an explicit inflation targeting regime. During the period of implicit inflation targeting, certain measures were implemented in preparation for the transition to the explicit inflation targeting regime. These included the establishment of the BRSA, the

[3] The 2003 Annual Report of the CBRT, which includes contributions from the CBRT, BRSA, Undersecretariat of Treasury, and SDIF, serves as an example of collaborative efforts within the framework of cooperation. https://www.tcmb.gov.tr/wps/wcm/connect/667c7904-1baa-4ca3-9c7d-eb0a23d28826/2003_Yillik_Rapor.pdf?MOD=AJPERES&CACHEID=ROOTWORKSPACE-667c7904-1baa-4ca3-9c7d-eb0a23d28826-mh5zofC - Access date: 14.01.2024

strengthening of the banking system, and the deepening of the financial sector (Bakir & Öniş, 2010, p. 84).

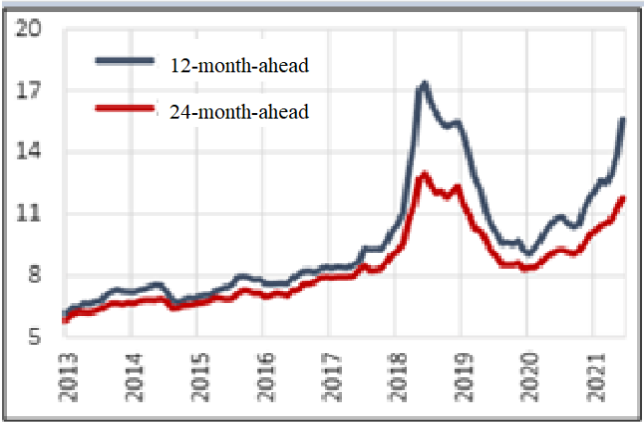
Figure 1 illustrates the discrepancies between targeted and actual inflation rates during the inflation targeting regime post-2002. An analysis of the deviation values reveals that the implicit inflation targeting period (2002-2005) achieved greater success than the explicit inflation targeting period (2006 onwards). Also, during the explicit inflation targeting period (2006 onwards), deviations consistently exceeded the two-percentage-point band, with the exception of 2010 and 2012. This indicates a failure of inflation targeting during this phase. Notably, in 2018, inflation deviated by 15.3 percentage points from the 5% target. Prior to the global financial crisis, the CBRT employed monetary policy instruments to maintain price stability within the inflation-targeting regime. This approach served to reinforce institutional confidence and to align the inflation expectations of economic entities with the set target. Nevertheless, following 2010, a growing divergence between targeted and actual outcomes undermined the CBRT's credibility. In addition to the rise in dollarization, the increase in the exchange rate pass-through coefficient has led to an increase in inflation expectations, as illustrated in Figure 2. Prior to 2017, the 12-month and 24-month inflation expectations were 7% and 6.4%, respectively. However, following 2018, there was a rapid increase, reaching 17.4% and 13% (Kara and Sarıkaya, 2021, p. 2). As a result, the rise in inflation expectations in Türkiye led to a notable increase in actual inflation. This can be attributed primarily to the CBRT's assertive policy measures aimed at curbing inflation and stabilizing currency depreciation expectations, which have yielded limited success (Gürkaynak et al., 2015, p. 34).

Figure 1. Deviations from the Inflation Target



Source: The graph was constructed by the author using data from the Turkish Statistical Institute database.

Figure 2. Inflation Expectations (%)



Source: Kara and Sarıkaya (2021)

In contrast to the prevailing view that fiscal dominance drives inflation, an analysis of the ratio of public net debt stock to GDP in Türkiye reveals a different trend. The ratio in question decreased significantly from 60.1% in 2002 to 32.3% in 2006, further dropping to 20.5% in 2011 and significantly declining to 8.6% by 2018[4]. Consequently, during the analysis period of 2005-2019, Türkiye did not experience inflationary pressures typically associated with expansive fiscal policies

[4] https://www.hmb.gov.tr/kamu-finansmani-istatistikleri - Access date: 20.12.2023

and public debt burdens seen in many other developing countries. Instead, fiscal discipline acted as a stabilizing force, reinforcing the effectiveness of inflation targeting (Ersel and Özatay, 2008, p. 32).

3. Literature

This section presents a summary of studies that examined the relationship between institutional quality and inflation, with a focus on differentiating between developed and developing countries. The literature generally analyzes developed and developing countries as a panel; thus, this summary begins with mixed-structured studies, followed by discussions on studies focused on developing countries and, finally, studies specific to Türkiye. In addition to studies with similar thematic coherence, emphasis was placed on chronological order and the analysis period. This approach was deemed appropriate given the prevalence of inflation targeting regimes after 1990.

In his 1995 study, Posen examined the period between 1960 and 1989 for 32 countries. These countries were characterized by low and medium incomes and included both developing and developed nations. CB independence was incorporated into the model through proxy variables. First, banks are assigned a value of 1 if they are permitted to operate in at least two of the following sectors: securities, insurance, and commercial lending. In the absence of this, a value of 0 is assigned. Second, banking supervision is assigned a value of 1 if it is not under the control of the CB, 0.5 if it is shared between the CB and another institution, and 0 if it is solely under the responsibility of the CB. Furthermore, another proxy variable is set to 1 for a federal political structure and 0 otherwise. In addition, the probability of two randomly selected legislators belonging to different parties is also considered. The four variables are used to construct an Effective Financial Opposition to Inflation (FOI) index. The findings indicate that CBs with legal independence provide significant different degrees of protection against inflation as political conditions change. Therefore, it is crucial that CBs be insulated from the deviations identified by the Barro-Gordon and Kydland-Prescott models and not be subjected to political pressure when controlling inflation (Cukierman and Gerlach, 2003, pp. 541-545).

In a separate study conducted between 1973 and 1994, a cross-sectional regression analysis was performed on 62 developed and developing countries. The findings of this study indicate that the effectiveness of CB independence may be less pronounced than previously claimed. This study revealed that inflation realizations and tax rates from previous periods play a significant role in determining inflation. Therefore, in addition to CB independence, other institutional reforms should be implemented. These include ensuring political stability and addressing time inconsistencies to reduce inflation. Furthermore, optimal tax policies and openness to international trade are other crucial factors. The study found that rapid adjustments aimed at increasing the tenure of the CB President do not make a significant difference unless fundamental conditions are met (Campillo and Miron, 1997, pp. 355-356). Furthermore, it was observed that in countries with high inflation rates, the banking system and financial firms adapt to the prevailing monetary environment, making it challenging to reduce inflation in such a setting (p. 338).

Aisen and Veiga (2008b) employed data on economic, political, and institutional variables for approximately 100 developed and developing economies between 1960 and 1999. The researchers employed the Generalized Method of Moments (GMM) estimator to conclude that political instability, in conjunction with low-quality democracy and institutional development, leads to volatility in inflation rates. Furthermore, the volatility of inflation is higher in developing economies where CB independence and economic freedom are at lower levels. This underscores the necessity to develop institutions that promote greater political stability as a means to reduce dependency on seigniorage financing of public deficits. Increased seigniorage leads to more political instability and inflationary outcomes, which highlights the importance of enhancing political stability through institutional development.

In a study conducted by Neyaptı (2012), 166 developed and developing countries were examined from 2000 to 2010. Regression analysis was performed, considering CB independence, inflation targeting, monetary boards, and other monetary unions. The findings revealed that countries that adopted inflation

targeting and monetary boards in the 2000s had a lower average inflation rate over the past decade than other countries. In a subsequent study, Garriga (2016) examined the effects of CB independence over the period 1970-2012, using annual data from 182 countries. The index used to measure CB independence was constructed using two primary factors: the political nature of the CB (assignment, dismissal, and term of office) and the objectives and limits of lending to the public sector. The index ranges from 0 (lowest independence) to 1 (highest independence). The findings from the analysis indicate that countries where CB independence is ensured experience reduced inflation. Furthermore, all components related to independence contribute to inflation control.

Guisinger and Singer (2010) conducted a study focusing on exchange rates by examining 110 developed and developing countries from 1974 to 2004. The study found that in a floating exchange rate regime, governments aim to have greater discretion over monetary policy. Institutionalized mechanisms become crucial in combating inflation under such circumstances. Therefore, independent CBs can achieve lower inflation rates.

In their 2017 study, Gelos and Ustyugova examined the impact of international commodity price shocks on local inflation in 31 developed and 61 developing economies from 2001 to 2010. Employing panel estimations of Phillips curves, the researchers used commodity prices, such as oil and food, as proxy variables for inflation uncertainty. The study's findings indicate that countries with stronger governance and CB independence are more successful in stabilizing inflation expectations and controlling price shocks.

Fazio et al. (2018) examined the relationship between institutions, inflation targeting, and financial stability using data from 66 countries from 1998 to 2014. Panel regression analysis revealed a negative correlation between institutional quality and outcomes related to inflation targeting and financial stability, which was particularly pronounced in countries with lower institutional quality. This result is consistent with the findings of Campillo and Miron (1997). Another study by Law and Soon (2020) examined 65 developing and developed countries from

1987 to 2014. Using a two-stage Generalized Method of Moments (GMM) estimator, this study found that countries with higher institutional quality tend to experience a mitigated impact of inflation. Moreover, improving institutional quality contributes to reducing inflation-induced income inequality.

Lim (2021) conducted a study to analyze the impact of CB independence on inflation in 147 developed and developing countries from 1970 to 2012. The study found that CB independence has a positive impact on disinflation. This emphasizes the importance of not only de jure independence but also de facto independence of CBs for successful inflation control. The study also highlights the need to address opaque CB operating structures in low and middle-income countries.

A synthesis of studies from developed and developing countries reveals that the impact of political stability, CB independence, financial depth, and macroeconomic balance on inflation is a prominent area of analysis. CB independence, as an indicator of institutional structure, is generally identified as a significant factor in reducing inflation. Additionally, the quality levels of institutional structure and governance should not be overlooked, as they can influence the level of political stability, fiscal policy, financial structure depth, and external shock impact. Consequently, the trajectory of inflation may shift in either a positive or negative direction. Countries which have stronger institutional and economic structures are better positioned to regulate inflation.

This paper will now examine the existing literature on developing countries. The majority of studies on this subject examine the effects of CB independence. The initial study indicates that in economies that were formerly socialist, the independence of CBs contributes to disinflation only above a certain threshold of liberalization level. The analysis of the variables indicates that an increase in the quality of the institutions that regulate the banking system, as measured by the ratio of domestic credit to the private sector, has a significant and substantial impact on inflation. Consequently, the level of institutional development in the banking system is found to be a significant determinant of non-inflationary

policies in developing countries. Consequently, transition economies can create favorable tools for controlling inflation over the long run by imposing constraints on policymakers and implementing banking system reforms to address macroeconomic instability (Cukierman, Miller and Neyapti, 2002). In a subsequent study, an inverse relationship between CB independence and inflation was observed in 22 countries where institutional structures underwent a transition following the collapse of socialism. The degree of correlation in question did not decline during periods of low inflation (Koziuk, 2019).

The findings of Huang and Wei (2006) indicate that the lack of credibility in monetary policy due to weak institutions leads to dollarization, even when the government is determined to maintain low inflation. The main reason is the absence of de jure and de facto CB independence. Additionally, factors such as the inability to ensure political and macroeconomic stability and weakness of the banking system lead to higher inflation rates than optimal in developing economies with low institutional quality.

In their 2020 study, Garriga and Rodriguez examined the correlation between CB independence and inflation in 118 developing countries over the 1980-2013 period. Their findings indicated that elevated CB independence is associated with reduced inflationary pressures. Notably, this influence on inflation is more pronounced in countries with greater democratic governance. In contrast, Çiçen (2023) examined the relationship between institutional quality and inflation, as well as the standard deviation of inflation and the sound money index, in 24 emerging economies over the period 2000-2019. The Fourier causality test was employed to investigate this relationship. The findings revealed a bidirectional causality relationship between institutional quality and inflation, as well as the standard deviation of inflation and the sound money index.

Studies conducted in developing economies typically examine the impact of CB independence and other factors on inflation in environments where institutional quality is often low, political instability is more pronounced, and financial markets are less developed. In these countries, strong CB independence

not only contributes to reducing inflation but also enhances economic stability. However, establishing a robust institutional structure and ensuring political and economic stability are complex and challenging processes. Consequently, the independence of CBs in developing countries is constrained by political interventions and uncertainty.

In regard to the studies on Türkiye, Kibritçioğlu (2002) analyzed the inflation dynamics in Türkiye after 1980. The study found that the majority of the inflation literature in Türkiye has focused on supply and demand side determinants. However, the role of political institutions and processes should also be taken into account for more accurate modeling. In a subsequent study on Türkiye, Demiralp and Demiralp (2019) highlight the mounting pressure on the CBRT over the past decade, despite the CBRT Law that guarantees instrument independence. The study posits that this relationship between the government and the CBRT constrains the capacity for price stability and sustainable growth.

Türkiye's inflation course exhibits similarities to that of other developing countries, although it differs in certain respects. Unlike other countries, certain internal and external shocks and crises in Türkiye can affect the economy and inflation in a more pronounced manner. Periodic political instability, economic fluctuations, exchange rate volatility, political pressures on CB independence and weaknesses in institutional quality present challenges to effective inflation control[5].

4. Fundemantal Economic Model

A model was constructed based on the study by Acemoğlu et al. (2008) in the econometrics section of the research, with the objective of elucidating the efficacy of political reforms and the enhancement of institutional quality:

$$v(\pi, \lambda, t) = \lambda(\hat{\pi} - \pi_{-1}) + (1 + \lambda)\rho \quad (1)$$

[5] To illustrate this, the 2016 coup attempt, the 2018 Brunson diplomatic crisis, the unconventional monetary policy initiated in 2021 following the pandemic, the 2022 Russia-Ukraine war, and the 2023 Kahramanmaraş earthquakes have caused economic and structural disruptions in Türkiye.

In the equation, the function v represents the variables that comprise the model. The notation π represents measured inflation, $\hat{\pi}$ represents inflation expectations, and π_{-1} represents inflation in the previous period. ρ indicates the constraints faced by policymakers when implementing inflation targeting. As discussed in the introduction and literature review, populist policies implemented alongside monetary and fiscal expansion increase inflation expectations through ρ, thereby creating inflationary effects, particularly during election periods. The symbol λ in the equation represents the quality of institutional structure and varies within the range of $\lambda \sim [0,1]$. There is a close relationship between institutional quality and CB independence. When the value of λ is close to 0, CB independence is emphasized, public trust in CB policies increases, and inflation expectations over time are lower than the previous period's inflation. Consequently, policies designed to reduce inflation may be successful, resulting in lower inflation than the average inflation in previous periods $(\pi < \bar{\pi})$. However, as λ approaches 1, policymakers' behaviours become more dominant, and CB independence diminishes. In this instance, the discrepancy between the expected inflation rate and the actual inflation rate from the previous period widens. Consequently, the implementation of inconsistent policies will result in a failure to achieve the inflation target over time.

5. Econometric Methodology

The econometric analysis of this study is distinguished from existing literature by the incorporation of Fourier functions into the tests. In our analysis, we initially conducted a Fourier-stationarity test to ascertain the stationarity of the variables. This is of particular importance for cointegration analysis, as it is necessary for variables to be stationary at the same level. Subsequently, a Fourier cointegration test was conducted among the variables to determine whether there is a long-term relationship between them. The rationale behind conducting cointegration analysis is to observe the impact of institutional factors—the fundamental determinants of economic performance in the long term—on inflation rather than focusing on how short-term factors affect inflation. The superior aspects of the relevant Fourier methods are elucidated in the following subsections. The use of

the Fourier function allows for a more accurate modeling of the variables' changes over time. The graphs of the inflation rate and degree of political risk in Figure 3 and Figure 4 demonstrate the effectiveness of this approach. Consequently, the findings obtained from the econometric model are more robust and contribute new insights to the existing literature.

5.1. Fourier Stationarity Test

In this study, the Fourier KPSS (FKPSS) test by Becker, Enders and Lee (2006) was employed for the stationarity test. The KPSS test is a significant unit root test that does not incorporate structural breaks, as first introduced to the literature by Kwiatkowski et al. (1992). Becker et al. (2006) enhanced the FKPSS stationarity test by incorporating a Fourier function. The FKPSS test is capable of detecting not only rapid structural breaks but also slow changes. Fourier functions are able to capture nonlinear changes by using sine and cosine terms.

One of the key advantages of this method is that it does not require determining the number of breaks before constructing the model. The frequency number (k) in the Fourier function corresponds to the number of peaks, which is the number of breaks. Furthermore, the number of breaks in the Fourier function does not reduce the degrees of freedom, thereby maintaining the test's power. Becker et al. (2006) employed the following data generation procedure:

$$y_t = X_t'\beta + Z_t'\gamma + r_t + \varepsilon_t \quad (2)$$

$$r_t = r_{t-1} + u_t \quad (3)$$

In Equation (2) and (3), ε_t represents the stationary error term, while denotes the independently and identically distributed error term with a variance of σ_u^2. The vector $Z_t = [\sin\left(\frac{2\pi kt}{T}\right), \cos\left(\frac{2\pi kt}{T}\right)]$ is employed to capture structural breaks or other nonlinear fluctuations. In this equation, t represents the trend term, T denotes the sample size, and k signifies the frequency.

In order to test the hypothesis of stationarity $(H_0: \sigma_u^2 = 0)$, one of the models with a constant or a trend is estimated. The residuals are computed as follows:

$$y_t = \alpha_0 + \gamma_1 \sin\left(\frac{2\pi kt}{T}\right) + \delta_2 \cos\left(\frac{2\pi kt}{T}\right) + e_t \quad (4a)$$

$$y_t = \alpha_0 + \beta t + \gamma_1 \sin\left(\frac{2\pi kt}{T}\right) + \delta_2 \cos\left(\frac{2\pi kt}{T}\right) + e_t \quad (4b)$$

Equation (4a) tests the stationarity hypothesis, while Equation (4b) tests the trend stationarity hypothesis. The test statistic is calculated as follows:

$$\tau_\mu(k) \text{ veya } \tau_t(k) = \frac{1}{T^2} \frac{\sum_{t=1}^{T} \widetilde{S}_t(k)^2}{\tilde{\sigma}^2} \quad (5)$$

In Equation (5), $\widetilde{S}_t(k)$ is defined as the sum of the residuals of the (4a) and (4b) models, represented by et al. Becker et al. (2006) estimate $\tilde{\sigma}^2$ as follows:

$$\tilde{\sigma}^2 = \tilde{\gamma}_0 + 2 \sum w_j \tilde{\gamma}_j \quad (6)$$

In Equation (6), $\tilde{\gamma}_j$ represents the j-th sample autocovariance obtained from Equations (4a) and (4b). Additionally, $w_j, j = 1,2, \ldots, l$ is the weight series and l is the lag parameter. k is the frequency value that minimizes the sum of squared residuals (SSR), also known as the residual sum of squares (RSS).

In the absence of a nonlinear trend in the data generation process, the standard KPSS test yields more robust results than the FKPSS test. Consequently, it is essential to identify the absence of a nonlinear trend $(H^0: \gamma_1 = \gamma_2 = 0)$. The F test statistic is constructed as follows:

$$F_i(k) = \frac{(SSR_0 - SSR_1(k))/2}{SSR_1(k)/(T-q)} \quad i = \mu, \tau \quad (7)$$

In Equation (7), $SSR_1(k)$ represents the SSR calculated from Equations (4a) or (4b), while SSR_0 represents the SSR of the regression without trigonometric terms.

q is the number of independent variables. In the event that the null hypothesis is rejected based on the FKPSS test result for stationarity, the series has a unit root and the variable is nonstationary. Becker et al. (2006) posited that the F test should be employed when the stationarity hypothesis is not rejected in the FKPSS test, as the F test may exhibit excessive power when series are nonstationary in the FKPSS test (p. 391). Consequently, the findings from the F test will inform the decision regarding the use of the KPSS test without trigonometric terms in the subsequent analysis.

5.2. Fourier Cointegration Test

Tsong et al. (2016) introduced the Fourier Shin cointegration (FSHIN) test, which employs Fourier functions to contribute to the existing literature on cointegration testing. The FSHIN test was designed to test for the presence of cointegration in its fundamental hypothesis. In this context, the FSHIN cointegration test exhibits similarities to the FKPSS stationarity test. The test produces robust results that are independent of the form and number of structural changes.

The FSHIN test employs the following model:

$$y_t = d_t + x_t'\beta + \eta_t\,,\ \eta_t = \gamma_t + v_{1t}\,,\ \gamma_t = \gamma_{t-1} + u_t\,,\ x_t = x_{t-1} + v_{2t} \quad (8)$$

In Equation (8), u_t represents an independent identically distributed error term, and γ_t indicates a zero-mean random walk process. y_t and x_t are first-difference stationary processes. The deterministic component d_t can be defined as in Equation (9):

$$d_t = \gamma_0 + \gamma_1 t + f_t \quad (9)$$

It is possible to estimate Equation (9) without a trend. In this equation, f_t represents the Fourier function, which is defined as follows:

$$f_t = \alpha_k \sin\left(\frac{2\pi kt}{T}\right) + \beta_k \cos\left(\frac{2\pi kt}{T}\right) \quad (10)$$

In this function, the values of k, t and T are defined in accordance with the specifications of the FKPSS test. Equation (11) is employed to evaluate the fundamental hypothesis of cointegration $(\sigma_u^2 = 0)$ against the alternative hypothesis of no cointegration $(\sigma_u^2 > 0)$:

$$y_t = \delta_0 + \alpha_k \sin\left(\frac{2\pi kt}{T}\right) + \beta_k \cos\left(\frac{2\pi kt}{T}\right) + x_t'\beta + v_{1t} \quad (11)$$

The FSHIN cointegration test statistic is calculated as follows:

$$\mathrm{CI}_f^m = T^{-2}\widehat{\omega}_1^{-2}\sum_{t=1}^{T} S_t^2 \quad (12)$$

In Equation (12), $\widehat{\omega}_1^{-2}$ represents a consistent estimator of the long-run variance of v_{1t}. Additionally, S_t represents the partial sum of residuals in Equation (11).

6. Data and Findings

In this study, three variables were employed. Inflation rate, which we seek to elucidate, is the dependent variable. The independent variables are institutional quality and change in the exchange rate basket (CERB). The CERB variable was incorporated into the analysis as a control variable. This was done because the depreciation of the exchange rate, as discussed in the introduction, literature, and fundamental model, is a significant factor that increases inflation expectations and, consequently, inflation itself (McCarthy, 2007). Moreover, fluctuations in the exchange rate in developing countries can create vulnerability in foreign trade as an external factor. This is because the financial development levels of these countries are lower than those of developed countries, and these conjunctural fluctuations in the exchange rate can disrupt the optimal monetary policy that the CB is trying to implement. This situation may lead to the adoption of a monetary policy that takes into account the Taylor rule and considers growth changes alongside targeted inflation. Consequently, exchange rate fluctuations can

influence future inflation. Nevertheless, the stability of the exchange rate alone may not be a reliable predictor of future inflation (Aizenman, Hutchison and Noy, 2011). In Türkiye, governments have occasionally devalue the exchange rate in order to balance foreign trade, increase exports, and accelerate growth. The expected and unexpected changes in the exchange rate affect inflation through exchange rate pass-through on consumption, capital, trade goods, and energy prices. It is also notable that inflation rates in Türkiye are highly sensitive to fluctuations in the exchange rate (Dinçer and Kandil, 2011; Akgül and Özdemir, 2018). Furthermore, since the stabilization of the exchange rate post-2000, inflation targeting regimes have consistently achieved their inflation targets (Demez and Ustaoğlu, 2012, p. 169).

The analysis employs data on Türkiye's quarterly inflation rates, institutional quality, and CERB data for the period 2005-2019. The post-pandemic period is excluded from the analysis. Inflation rate data was obtained from the Turkish Statistical Institute (TSI). TSI changed the base year after 2003. However, since consumer price index figures are available on the TSI data portal after 2005[6], the starting year for the analysis was set to 2005. The Political Risk Rating (PRR) index, obtained from the ICRG database, was used as an indicator of institutional quality, which is commonly used in the literature. The PRR variable is published quarterly after 2016, so quarterly data was used in our analysis. The CERB variable was obtained from the CBRT's Electronic Data Delivery System (EDDS). The CERB was created by taking the average of the dollar/TL and euro/TL exchange rates.

The PRS Group is headquartered in the United Kingdom and initiated its institutional quality measurement program in 1979. The PRS Group has been calculating statistics for Türkiye since 1984. As of 2022, the PRS Group monitors 141 countries worldwide for political, economic, and financial risks, and updates the ICRG database on a monthly basis. The PRR variable has been employed as an indicator of institutional quality in numerous studies, including those by Knack

[6] https://data.tuik.gov.tr/Bulten/DownloadIstatistikselTablo?p=KMExlm5AVU2ln21dc2evQ2SnPKPmGEBqV6H8CcJSjNNBzZZT2CJNzYtIqx1WGQK8 – Access date: 19.04.2024

and Keefer (1995), Hall and Jones (1999), Narayan, Narayan and Thuraisamy (2014), and hundreds of other studies. The selection of ICRG as the institutional proxy is due to its extensive time-series coverage of a large number of countries and its reflection of a broader range of relevant institutional indicators (Cubeddu et al., 2019, p. 14). Furthermore, when examining the correlations of the ICRG index with other databases measuring institutional quality, a high positive relationship is observed, ranging from 81% to 89%. This indicates that consistent results can be obtained in econometric analysis by using the PRR variable as a proxy variable (Aron, 2000, p. 116).

The PRR is comprised of 12 variables, including government stability, socioeconomic conditions, investment profile, internal and external conflict, corruption, military influence in politics, religious and ethnic tensions, law and order, democratic accountability, and quality of the bureaucracy. The risk score, which ranges from 0 to 100, is used to assess the level of political risk in a given country. A score below 50 is indicative of a high level of political risk, while a score above 50 is indicative of a low level of political risk. A risk score of 50-60 is indicative of a high risk, 60-70 of a moderate risk, 70-80 of a low risk, and 80-100 of a very low risk.

Table 1: Descriptive Statistics

	Inflation Rate	**PRR**	**CERB**
Average	9.461333	57.225	2.407332
Median	8.705	56.5	1.385016
Maximum	24.52	70	26.26003
Minimum	3.99	50	-7.598811
Standard Deviation	3.5111	5.238729	6.200851
Number of Observations	60	60	60

Table 1 presents the descriptive statistics of the variables. The average quarterly inflation rate for the period 2005-2019, which includes 60 observations, is 9.5%. During this period, inflation rate ranged as high as 24.5%, with a low of 4%. The mean PRR variable is 57, with a maximum of 70 and a minimum of 50. The standard deviation of the PRR variable is higher than that of inflation rate.

However, the CERB is the most volatile variable. Although the average of this variable is 2.4 points, there was a 7.6-point change in the exchange rate in the first quarter of 2005, indicating appreciation. In contrast, a significant depreciation of the currency basket was observed in the third quarter of 2018.

Figure 3 demonstrates that the inflation rate remained within the single-digit range of 10-11% until the first quarter of 2018. However, in the third quarter of 2018, there was a notable increase in inflation, reaching 24.5%. Figure 4 illustrates that the PRR index for Türkiye exhibited a gradual increase from low risk in 2005 to average risk in 2008, before reaching high risk levels after 2008. This elevated risk persisted until 2019. As is evident from Figure 5, there has been a pronounced degree of volatility in the shift in the exchange rate basket, as indicated by the considerable fluctuations evident in the data.

Figure 3. Inflation Rate and its Fourier Function

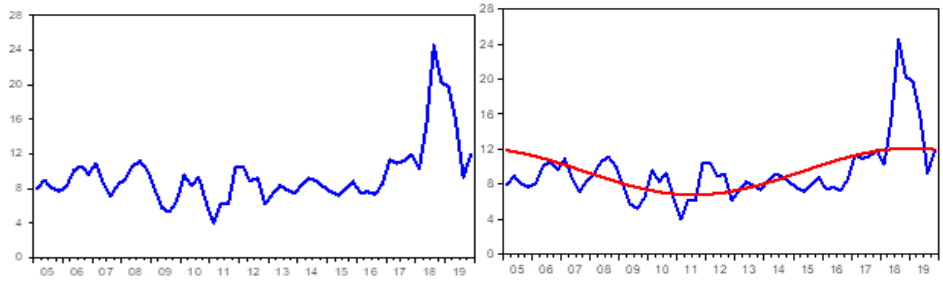


Figure 4. Political Risk Rating and its Fourier Function

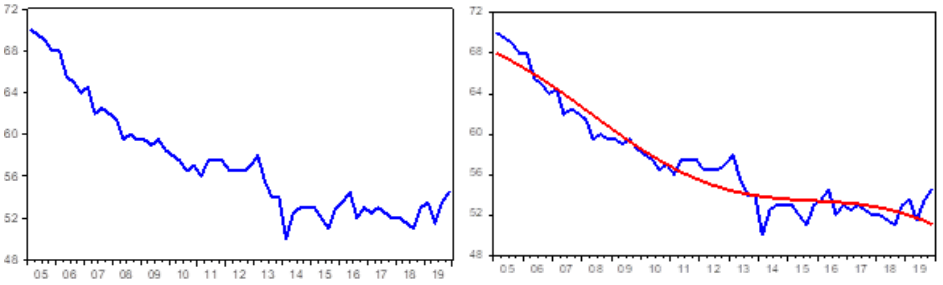
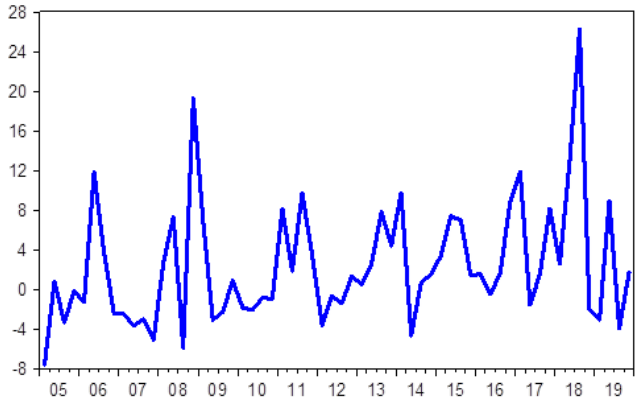


Figure 5. Change in Exchange Rate Basket



6.1. Stationarity Tests of Variables

Unit root tests were conducted at the 5% significance level.

6.1.1. Stationarity Test of Inflation Rate

The inflation rate variable did not demonstrate a discernible trend in the FKPSS test, as illustrated in Figure 3. Consequently, a model with a constant was employed. The findings are presented in Table 2.

Table 2: Stationarity Test Results of Inflation Rate

Frequency	1.000000
Min. SSR	516.3340
Fourier KPSS	0.256826
Bandwith	4.000000
F-test statistic	11.64695

Note: Critical values for FKPSS are 0.2699, 0.1720, and 0.1318 for 1%, 5%, and 10%.

As demonstrated in Table 2, the FKPSS test statistic is greater than the FKPSS critical value (0.257>0.172), indicating that the null hypothesis is rejected. Consequently, the inflation rate variable is stationary.

6.1.2. Stationarity Test of PRR

In light of the observed trend in the PRR variable, as illustrated in Figure 4, a model with a constant and trend was employed in the FKPSS test. The findings are presented in Table 3.

Table 3: Stationarity Test Results of PRR

Frequency	1.000000
Min. SSR	122.8441
Fourier KPSS	0.069707
Bandwith	5.000000
F-test statistic	37.22889

Note: Critical values for FKPSS are 0.0716, 0.0546, and 0.0471 for 1%, 5%, and 10%.

The calculated FKPSS test statistic is greater than the FKPSS critical value (0.0697>0.0546), indicating that the null hypothesis is rejected. Consequently, the PRR variable is also stationary.

6.1.3. Stationarity Test of the CERB

As illustrated in Figure 5, the CERB exhibited no discernible trend, necessitating the application of a model with a constant term. Upon comparing the FKPSS test statistic presented in Table 4 with the critical value (0.0101 < 0.0269), it becomes clear that the CERB variable is not stationary. In such instances, as elucidated in the methodology section, the F test is employed. The calculated F-test statistic is less than the critical value (1.53 < 4.93), indicating that the FKPSS test is not an appropriate statistical test for this variable. Therefore, the KPSS test was employed.

Table 4: Fourier-Test Results of CERB

Frequency	1.000000
Min. SSR	2152.539
Fourier KPSS	0.101348
Bandwith	0.000000
F-test statistic	1.532630

Note: Critical values for FKPSS are 0.2699, 0.1720, and 0.1318 for 1%, 5%, and 10%. The critical values for the F test are 6.730, 4.929, and 4.133 for the 1%, 5%, and 10% levels, respectively.

Table 5 presents the results of the KPSS test for the exchange rate variable. The KPSS test statistic is greater than the critical value of the LM statistic at the 5% significance level (0.475>0.463), indicating that the null hypothesis is rejected. The null hypothesis in the KPSS test states that the variable contains a unit root and is non-stationary. Therefore, the CERB is stationary.

Table 5: Stationarity Test Results of CERB

		LM statistic
KPSS test statistic		0.475
Asymptotic critical values	1%1 significance level	0.739
	5% significance level	0.463
	10% significance level	0.347

6.2. Cointegration Test

The FSHIN cointegration test, which is based on the FKPSS test, is employed as the cointegration test. Following the stationarity tests, which revealed that the inflation rate, PRR, and CERB variables were stationary, the FSHIN test was applied. In the test, the inflation rate variable is dependent, whereas the PRR and CERB variables are independent. The PRR variable indicates an appropriate institutional structure that encompasses several institutional factors, consistent with the index methodology. Moreover, the CERB is employed as a control variable in the cointegration analysis. This is because alterations in the exchange rate basket may influence inflation through disparate dynamics, both within Türkiye and in other countries (Kibritçioğlu, 2002; Dornbusch, 1991). Moreover, exchange rate fluctuations in an inflation-targeting regime exert a more pronounced influence on domestic prices than in other developing countries (Leigh and Rossi, 2002). Consequently, the long-run direct and indirect effects of institutional quality on inflation can be elucidated through this model. Table 6 presents the results of the FSHIN cointegration test, which was employed to examine the long-run relationship between Türkiye's inflation level, institutional quality, and CERB variables.

Table 6: Fourier-Shin Cointegration Test Results

Frequency	1.000000
Min. SSR	342.6916
Fourier cointegration test statistic	0.068399
Bandwidth for Fourier cointegration test	2.000000
Shin test statistic	0.226554
Bandwidth of the Shin test	5.000000
F-test statistic for Fourier cointegration test	20.63021

Note: Critical values for SHIN cointegration at 1%, 5%, and 10% levels (for p=1 and k=1) are 0.198, 0.124, and 0.095, respectively. The critical F test are 5.774, 4.066, and 3.352 at the 1%, 5%, and 10% levels.

A comparison of the FSHIN cointegration test statistic with the critical value at the 5% significance level (0.068 < 0.124) indicates that the null hypothesis cannot be rejected. This suggests the presence of cointegration between institutional quality and inflation rate in Türkiye.

The results indicate that alterations in Türkiye's institutional quality exert a significant influence on the country's inflation dynamics, particularly in the long term. These findings offer a crucial perspective for policymakers and decision makers in considering the potential benefits of institutional quality enhancements on inflation.

7. Conclusion

A review of countries experiencing high inflation, large budget deficits, and depreciated currency reveals a commonality in their weak institutional structures. In addition to political instability, property rights are not fully enforced, necessary constraints on politicians are lacking, and corruption is prevalent in these countries. Countries with such exclusionary institutions tend to experience serious economic crises and higher volatility in economic indicators.

This study examines the long-term relationship between institutional quality and inflation rate in Türkiye using quarterly data from 2005 to 2019. Initially, the stationarity of the series was examined by performing the FKPSS and KPSS tests. It was determined that inflation rate, institutional quality, and exchange rate changes

were all stationary. Subsequently, the cointegration relationship between these variables was tested using the newly introduced FSHIN test in the literature. The results suggest the existence of a long-term relationship between institutional quality and inflation rate in Türkiye.

A review of the inflation targeting regime in Türkiye during the relevant period reveals that the implicit inflation targeting period (2002-2005) was more successful than the explicit inflation targeting period (after 2006), which saw deviations from the inflation targets. Although the CBRT became legally independent in 2001, particularly in the wake of the global financial crisis, the CBRT remained susceptible to political influence and was constrained in its ability to utilize its monetary policy instruments independently. This factor serves to impede the decline of inflation and, in fact, to exacerbate it. This is due to the fact that the prerequisites for the inflation targeting regime could not be met. Consequently, during the 2005-2019 period, when positive developments were observed in the PRR variable, single-digit inflation figures were recorded. However, due to a decline in institutional quality (increased political risks) over time, inflation has been on an upward trend since 2012. Subsequently, following 2017, inflation commenced to fluctuate in double digits. The decline in the CBRT's independence, the inflation target remaining unaltered despite deviations, reduced transparency and accountability, external shocks, loose monetary policy and undervalued exchange rate policy in Türkiye all contribute to the deterioration of institutional quality.

The Turkish example offers significant insights, particularly for developing countries with fragile economic and political systems. Consequently, further research on inflation's impact on Türkiye is warranted. In future studies, the relationships between the government, CBRT and voters can be examined more closely through the lens of principal-agent theory over an extended period. At this juncture, it is imperative to examine the reconstruction of the CBRT to enable it to implement monetary policy independently and to determine how the this institution will instill confidence in the markets. It is evident that CBRT must have an effective communication strategy to guide the markets. In establishing this

strategy, it is crucial to clarify which new meso-institutions can be created. Additionally, the necessity for financial infrastructure should be discussed. Furthermore, the impact of the CBRT's interventions in the foreign exchange market on inflation can be examined through an analysis of gold, energy, and commodity prices, determining the currency pass-through arising from exchange rate volatility and analyzing the effects of output gaps within the framework of the Hybrid New Keynesian Phillips curve. In such research, the role of foreign capital inflows should also be considered for the CBRT to take appropriate measures. Moreover, the impact of economic policies implemented in conjunction with the government on income distribution and the welfare of different segments should be investigated. Additionally, with the global pandemic affecting the world and the subsequent formalization of inflation, a cross-sectional analysis can be conducted to examine how inflationary transmission mechanisms differ between developing countries like Türkiye and developed countries.

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