__Araştırma Makalesi/Research Article__

PSYCHOLOGICAL MOTIVES IN THE CONDUCT OF MONETARY POLICY: DELAYED ACTIONS

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ABSTRACT

The effects of increasing versus decreasing interest rates on economic performance differ in an economy. In Türkiye, members of the Central Bank's Monetary Policy Committee are criticized by governments when interest rates are increased and praised when they are decreased. Therefore, we examine whether there is a psychological motive for the Committee's actions when interest rates need to be increased or decreased. In this study, Bai and Ng's symmetry tests are applied to the Central Bank's interest rate decisions. The results show that Türkiye's short-term interest rate changes are positively skewed, which suggests that the Central Bank is more likely to decrease rather than increase interest rates when needed. Thus, interest rate increases occur less frequently than decreases, as suggested by positive skewness (third moment), and have larger magnitudes in raises, as suggested by hyperskewness (fifth moment). Implementing legal and institutional reforms to protect members of the Monetary Policy Committee from political pressure could therefore be a vital step. This could include terms of appointment that ensure longer tenure and protection against arbitrary dismissal; clear legal mandates that prioritize economic objectives such as price stability and financial stability; and statutory provisions that limit the government's ability to interfere in monetary policy decisions.

Keywords: Central Bank, Monetary Policy, Psychological Motive

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Para Politikasının Yürütülmesinde Psikolojik Motivasyonlar: Gecikmiş Eylemler

ÖZET

Faiz oranlarını artırmanın ve azaltmanın ekonomik performans üzerindeki etkileri farklılık göstermektedir. Türkiye'de Merkez Bankası Para Politikası Kurulu üyeleri, faiz oranları artırıldığında hükümet tarafından eleştirilmekte, düşürüldüğünde ise takdir edilmektedirler. Bu nedenle çalışmada, faiz oranlarının artırılması veya azaltılması gerektiğinde Kurul'un eylemleri için psikolojik bir güdü olup olmadığı incelenmektedir. Bu çalışmada, Bai ve Ng (2005) simetri testleri Merkez Bankası'nın faiz oranı kararlarına uygulanmıştır. Sonuçlar, Türkiye'nin kısa vadeli faiz oranlarındaki değişikliklerin pozitif çarpık olduğunu göstermekte, bu da Merkez Bankası'nın gerektiğinde faiz oranlarını artırmaktan ziyade düşürme olasılığının daha yüksek olduğunu göstermektedir. Dolayısıyla, pozitif çarpıklığın (üçüncü moment) işaret ettiği gibi, faiz oranı artışları düşüşlerden daha az sıklıkta gerçekleşmekte ve hiperçarpıklığın (beşinci moment) işaret ettiği gibi artışlar daha ölçekli büyüklüklere sahip olmaktadır. Para Politikası Kurulu üyelerini siyasi baskıdan korumak için yasal ve kurumsal reformların uygulanması bu nedenle önemli bir adım olarak düşünülmektedir. Ayrıca ilgili düzenlemelerin, daha uzun görev süresi ve keyfi görevden almaya karşı koruma sağlayan atama şartlarını; fiyat istikrarı ve finansal istikrar gibi ekonomik hedeflere öncelik veren açık yasal yetkileri ve hükümetin para politikası kararlarına müdahale etme kabiliyetini sınırlayan yasal hükümleri dahil edebilecek düzeyde olması önerilmektedir.

Anahtar Kelimeler: Merkez Bankası, Para Politikası, Psikolojik Motivasyon

INTRODUCTION

Monetary policy is an essential tool for maintaining economic stability and promoting economic growth. Central banks use various tools, such as interest rates, to achieve macroeconomic objectives, including price stability and full employment. However, the effectiveness of monetary policy depends on various factors, including the timeliness and appropriateness of policy actions.

The conduct of monetary policy, essential in economic governance, is a multidimensional process shaped not only by economic principles but also by the complex realm of human psychology. The decisions of monetary policymakers are influenced by numerous factors, ranging from economic indicators to political considerations. However, the psychological motives driving policymakers' choices should also be examined given their profound impact on the decision-making processes of those entrusted with directing the course of monetary policy. In other words, monetary policymakers should consider not only economic indicators but also psychological factors that affect market participants' expectations and behavior. By considering these psychological aspects, monetary policy can be better managed and made more effective. Furthermore, monetary policy is often subject to the complexities of human decision-making (Sent, 2004).

As economies become increasingly interconnected and dynamic, understanding the human dimensions of economic decision-making becomes ever more crucial. Psychological factors, such as heuristics, biases, and emotions, can influence decision-making and affect the timing and magnitude of policy actions. Fear, uncertainty, cognitive biases, and group dynamics are among the psychological factors that may influence the conduct of monetary policy, often resulting in delays that reverberate through the economic landscape. The consequences of delayed monetary policy actions extend beyond mere temporal considerations. Delayed monetary policy actions can have significant economic consequences, including higher inflation and output gaps, as well as financial stability.

Monetary policy is deeply rooted in economic theory but cannot be fully understood or effectively implemented without acknowledging the significant role of psychological factors. These factors do not only shape the behavior of market participants but also influence central banks' decision-making processes. Thus, it is crucial to recognize that the tools central banks use, such as interest rates, operate within an environment in which both economic fundamentals and psychological elements are at play. The integration of these factors ensures that monetary policy remains adaptable to the dynamic nature of economic systems and human behavior. From this point of view, it is necessary to explore how central banks utilize interest rates as a primary tool to steer the economy while also considering the psychological implications of such decisions.

The central banks' main tool in monetary policy is the short-term interest rate. Such rates are usually set by a committee generally composed of mainly from the central bank's administration. Central banks set these short-term interest rates to influence macroeconomic variables, such as inflation and output. Tight monetary policy, associated with higher overall interest rates, decreases output growth (and increases unemployment). Loose monetary policy, which is associated with lower overall interest rates, increases output (and decreases unemployment). Although any change in interest rates may not affect inflation—at least in the short run—almost all economic schools of thought suggest that increasing (decreasing) interest rates do not affect output (or unemployment) but may decrease (increase) inflation in the long run. Thus, central banks should raise interest rates as inflation (or its threat) increases to reduce potential inflation. Consequently, it is more costly in the short run to increase the interest rate than to decrease it. However, delaying necessary increases requires larger interest rate increases in the

future. Larger interest rate changes increase interest rate volatility and lower output, consumption, and investment (see Fernandez-Villaverde et al., 2011).

The literature on central banks' conduct of monetary policy decision-making emphasizes the complicated relationship between economic principles and psychological factors. Studies have shown that psychological motives, like confidence, play a critical role in the conduct of monetary policy, particularly in the transmission of policy and its impact on economy (de Bondt, 2015). Furthermore, the impact of monetary policy on credit costs and economic activity is influenced by psychological factors, such as responses to shocks and confidence, as well as market imperfections, highlighting the interaction between psychological motives and monetary policy outcomes.

Even if the interaction between borrowers' and lenders' psychological motives and monetary policy transmission is essential for understanding the dynamics of economic activity (Gertler and Karádi, 2015). Central bank communication is another important aspect of monetary policy, as the provision of information by central banks to the public regarding policy objectives and economic outlook influences market expectations and behavior (Blinder et al., 2008). Additionally, to effectively strengthen monetary policy and manage inflation expectations, a change in approach is necessary—one that focuses on the psychological factors that influence market sentiment and expectations (Okhrymenko and Biloshapka, 2022). In the context of monetary policy committees, psychological factors related to imperfect information are shown to influence decision-making processes, emphasizing the relevance of psychological motives in the design and settin up of monetary policy (Morimoto, 2021). Moreover, the study of herd behavior in response to monetary policy reveals that conventional and unconventional monetary policies significantly influence equity market herd behavior, indicating the psychological aspects of market participants' responses to policy decisions (Krokida et al., 2020).

From the psychological motives perspective, central bankers navigate a difficult environment in monetary policy, where psychological biases and external pressures can profoundly influence decision-making processes. Although policymakers strive for impartiality, they are influenced by cognitive biases such as loss aversion, perhaps causing reluctance in executing essential interest rate increases (Kahneman and Tversky, 1979; Dupraz et al., 2023). This inclination corresponds with models of asymmetric preferences in monetary policy, as evidenced by Bernanke et al. (2004) and further substantiated by Surico (2007). Political economic factors, such as electoral cycles, may generate further motivations for delaying policy measures (Alesina and Roubini, 1992; Jiménez, 2023). Furthermore, central bankers must manage public perception and communication difficulties, as emphasized by Blinder et al. (2008), while simultaneously contending with inherent delays and uncertainties in economic data that could impede timely intervention (Orphanides, 2001). The decision-making frameworks utilized by central banks incorporate additional behavioral factors that may result in policy stagnation (Sibert, 2006).

Overall, these cases demonstrate the significance of psychological motives in monetary policy conduct, ranging from policy setup to market's reaction and inflation dynamics. The interaction between psychological factors and monetary policy extends to policy conduct, as evidenced by the influence of monetary policy on herd behavior and stock returns, emphasizing the global relevance of psychological motives in monetary policy. Understanding the psychological substructures of economic agents and market participants is essential for formulating effective monetary policy strategies and achieving effective policy transmission and economic stability.

The Central Bank of the Republic of Türkiye (CBRT) sets its monetary policy by the Monetary Policy Committee (MPC). When the CBRT decreases interest rates, it is praised by the government and

the public, but when it increases interest rates, it is heavily criticized. High interest rates adversely affect investment decisions in all sectors: "We believe that competitive parity levels must be maintained by continuing to lower interest rates" (IHA, 2014). The CBRT also recognizes the adverse effects of interest rate increases: "Monetary policy adopted since 2010… contributed to lower aggregate demand" (CBRT, 2015, p. 33). Although the CBRT is an institution and cannot have cognitive processes or motives, members of the MPC may have their own motivations. Therefore, although the MPC may feel that it is necessary to change the interest rate, members might be reluctant to increase it because of the criticism they will likely encounter.

We argue that this reluctance is a form of procrastination, defined by Klingsieck (2013) as the voluntary delay of an intended, necessary, and/or important activity, despite the expectation that potential negative consequences from the delay that will outweigh any positive consequences that may emerge from it. The literature suggests various factors that may lead to procrastination. Delaying an activity (task aversiveness) might be due to the unpleasantness of the task (see Blunt and Pychyl, 2000), where unpleasantness is determined by the anticipated outcome (Gollwitzer, 1990). Thus, MPC members may delay increasing interest rates to avoid criticism. Although this solution results in interest rate increases, when increases do occur, they are larger.

As a second motive, MPC members might be reluctant to increase rather than decrease interest rates due to dispositional optimism, which is an expectation that desirable events will happen rather than undesirable events (Scheier and Carver, 1985). Positive expectations about the future can be associated with several well-known biases, such as wishful thinking, which is a tendency to overestimate the probability of good events and underestimate the probability of bad events (Weinstein, 1980; Mayraz, 2011). In this regard, members of the MPC could be underestimating economic risks that would require increasing interest rates and overestimating the likelihood of positive developments, such as lower oil or food prices.

Overall, this study investigates the interaction of psychological motives in the decision-making processes of monetary policy authorities, with a specific focus on the phenomenon of delayed actions. In the realm of economic governance, considering the existing literature on the psychological factors that influence policymakers is vital for comprehending the nuances of their choices and their subsequent impact on the broader economy. This study aims to demonstrate the effects of delayed actions as the missing part in monetary policy by empirically examining the psychological factors shaping decision-makers' behavior. Although the economic implications of monetary policy decisions have been widely studied, the psychological underpinnings that contribute to postponement or delayed implementation remain less explored. Therefore, this study aims to help fill this gap in the literature by providing evidence from a developing economy in the case of Türkiye. Moreover, this study positions itself at the intersection of economics and psychology, recognizing that the decisions made by policymakers are not immune to human factors that shape all decision-making processes. By doing so, it attempts to contribute not only to the theoretical understanding of economic decision-making but also to provide practical insights that can inform policymakers and enhance the effectiveness of monetary policies. In light of the aforementioned facts, the findings of this study have important implications for policymakers and central bankers, as well as for researchers in the fields of economics and finance.

In the following sections of this study, the data and methodology are explained in Section 1. Moreover, Section 2 presents the study's findings, while the conclusion and discussion section provides an evaluation and policy recommendations according to these findings.

1. DATA AND METHODOLOGY

The CBRT was the net lender to financial markets for most of the period considered; thus, we deliberated the lending rate to be CBRT's policy rate. We gathered all lending, borrowing, and overnight (O/N) interbank interest rates that CBRT charged to market participants between February 20, 2002 and January 26, 2024, and placed more emphasis on the lending rate. The data include MPC rate announcements that indicate whether any rate has changed. If no rate change stemmed from an MPC meeting, we did not include an interest rate changes in the dataset. The full dataset includes 119 observations for each type of interest rate used in this study. The interest rate data are used in both change and percentage change forms. The data used in this study are summarized in Table 1.

Table 1: Data Summary (2002-2024)

Variable	Abbreviation	Source	Data Form
Lending Interest Rate	LENDING	CBRT (2024): Electronic Data Delivery System	Change and Percentage Changes
Borrowing Interest Rate	BORROWING	CBRT (2024): Electronic Data Delivery System (EVDS)	Change and Percentage Changes
O/N Interbank Interest Rate	SIMPLE ON	CBRT (2024): Electronic Data Delivery System	Change and Percentage Changes

This study employs the Bai and Ng (2005) test to analyze a symmetry and hyperskewness in the CBRT's monetary policy, emphasizing psychological factors that influence interest rate decisions. Initially intended to assess skewness, kurtosis, and normality in time series data, the Bai and Ng (2005) test is extended here to include hyperskewness (the fifth moment) to better understand the CBRT's decision-making processes. First, the distribution of interest rate changes was examined for asymmetry using the skewness test. We define the skewness coefficient (τ) as follows:

$$\tau = \frac{\mu_3}{\sigma^3} = \frac{E[(x-\mu)^3]}{E[(x-\mu)^2)]^{3/2}} \tag{1}$$

where μ_3 is the third central moment of the interest rate changes, σ is the standard deviation, x represents the interest rate changes, and μ is the mean of the interest rate changes. The skewness test statistic ($\hat{\pi}_3$) can be computed as follows:

$$\hat{\pi}_3 = \frac{\sqrt{T}\hat{\tau}}{s(\hat{\tau})} \tag{2}$$

where T represents the sample size, $\hat{\tau}$ denotes the sample estimate of the skewness coefficient, and $s(\hat{\tau})$ is the standard error of this estimate.

For the Bai and Ng (2005) test for hyperskewness, the fifth moment of the distribution of interest rate changes is considered. This moment provides valuable insights into whether the CBRT is inclined to make exceptionally large adjustments when modifying interest rates. The mathematical expression of the fifth moment (μ_5) is as follows:

$$\mu_5 = E[(x - \mu)^5] \tag{3}$$

Let,

$$Y_T = \begin{pmatrix} \frac{1}{\sqrt{T}}\sum_{t=1}^{T}(X_t - \bar{X})^{r_1} \\ \frac{1}{\sqrt{T}}\sum_{t=1}^{T}(X_t - \bar{X})^{r_2} \end{pmatrix} \tag{4}$$

It can be shown that:

$$Y_T = \alpha \frac{1}{\sqrt{T}} \sum_1^T Z_t + o_p(1) \tag{5}$$

where $\alpha = \begin{bmatrix} 1 & 0 & -r_1\mu_{r_1-1} \\ 0 & 1 & -r_2\mu_{r_2-1} \end{bmatrix}$ and $Z_t = \begin{pmatrix} (X_t - \mu)^{r_1} \\ (X_t - \mu)^{r_2} \\ (X_t - \mu) \end{pmatrix}$.

Given the central limit theorem's assumption that Z_t such that $\frac{1}{\sqrt{T}}\sum_{t=1}^T Z_t \xrightarrow{d} N(0,\Gamma)$, where $\Gamma = lim_{T\to\infty} TE(\bar{Z}\bar{Z}')$, under the null hypothesis of symmetry we obtain $Y_T \xrightarrow{d} N(0, \alpha\Gamma\alpha')$. Using the conveniently obtained consistent estimate of $\hat{\alpha}\hat{\Gamma}\hat{\alpha}'$, we have:

$$\mu_{r_1,r_2} = Y_T'(\hat{\alpha}\hat{\Gamma}\hat{\alpha}')^{-1}Y_T \xrightarrow{d} \chi_2^2 \tag{6}$$

This test is, theoretically, more efficient than the one that considers only the third moment. The drawback is that the finiteness of the $(2r_2)th$ moment $(r_1 - r_2)$ is necessary for this test. Additionally, unless we have a very large amount of data, it could be challenging to derive exact estimates, even if the population moments exist. We only take into account the test for $\hat{\mu}_{35}$ when $r_1 = 3$ and $r_2 = 5$. It's noteworthy that $\hat{\mu}_{35}$ functions well even for distributions without a finite fifth moment.

2. FINDINGS

In this study, Bai and Ng (2005) asymmetry tests were applied to the central bank's interest rate decisions to investigate whether there is a psychological motive exists behind the committee's actions when rates need to be increased or decreased [see Bai and Ng (2005) for detailed methodology].

Before providing a set of formal test statistics, we first present histograms and descriptive statistics of interest rate changes. The two left panels of Figure 1 show histograms and descriptive statistics for both changes and percentage changes in lending rates. For the change in interest rates, there is positive skewness and excess kurtosis (above 3; $5.069 - 3 = 2.069$), and although the figure's asymmetry suggests the existence of (excess) kurtosis, it is not immediately evident. Since, Türkiye had high levels of inflation in the earlier and last parts of our sample [for example, according to TURKSTAT (2024), approximately the average inflation in 2002 was 29.7%, in 2014 was 8.9% and in 2023 was 54.7%], a 50 basis point change in the early part of the sample and the later part of the sample does not mean the same thing, or the change in the later part of the sample and the last part of the sample does not mean the same thing, too. Thus, we also report the relevant statistics' percentage change in interest rates.

As evident from Figure 1, which shows the change and percentage change in the lending rate, most observations are on the left side of the histogram (especially for percentage change), but a few larger values are on the right, which indicates positive skewness. Higher-value bars are separated from each other by the width of one bar for the change in lending rate and by more than one bar for the percentage change in lending rate. These outliers contain valuable information, implying that CBRT is less likely to increase interest rates than decrease. When the interest rate increases, the magnitude is greater than when it decreases. The middle two panels of Figure 1 show the change and percentage change in the borrowing rate histogram and descriptive statistics. The borrowing rate also exhibits positive skewness, with more recurrences observed in lower values and fewer recurrences in upper values. Again, outliers are identified in the histogram, and the values for percentage change are striking

in their differences. The right two panels of Figure 1 show the change and percentage change in the O/N interbank rate histogram and descriptive statistics. The O/N interbank rate also exhibits a positive skewness similar to that of the borrowing rate.

Türkiye adopted an inflation-targeting regime in 2006. Figure 2 shows results very similar to those in Figure 1 for the sub-period between 2006 and 2024, which covers part of the inflation-targeting era. The data are skewed to the right for all histograms in Figure 2, much as in Figure 1. In Figure 2, however, changes in lending, borrowing, and O/N interbank rates have a higher skewness value, while the percentage change for all rates has a lower skewness value than for the full period.

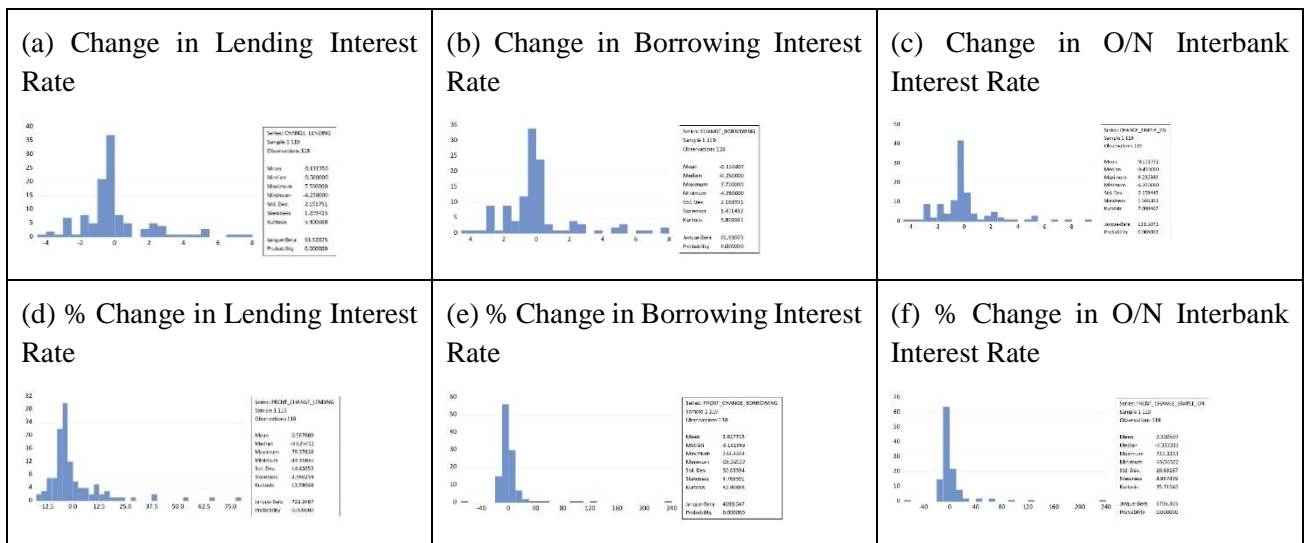**Figure 1:** Skewness, Histogram, and Descriptive Statistics (2002-2024)

Figure 2: Skewness, Histogram, and Descriptive Statistics (2006-2024)
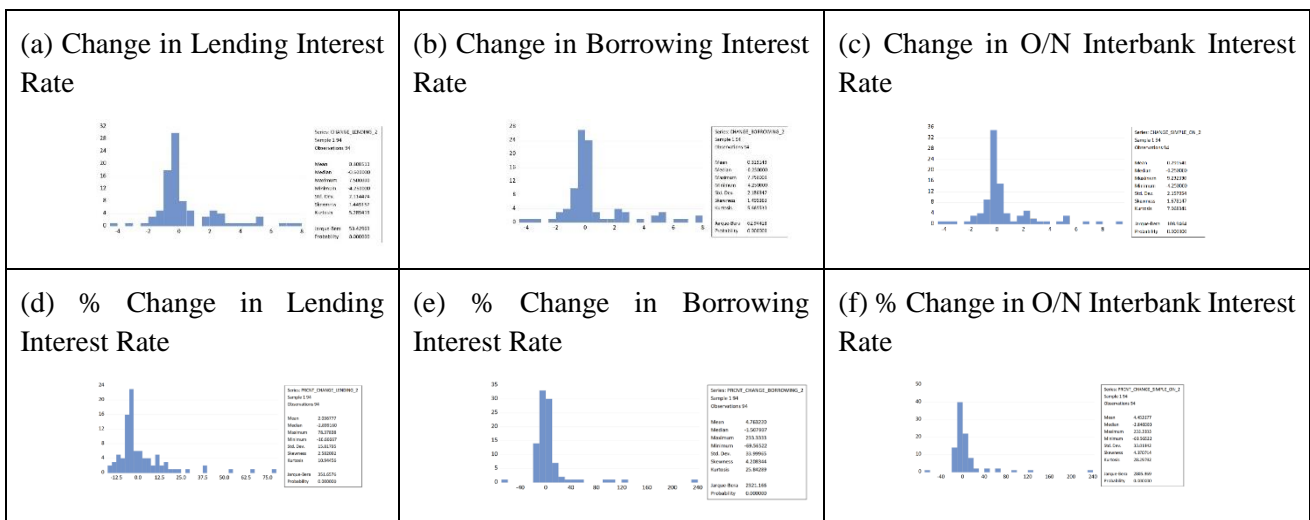

Table 2 reports various formal asymmetry tests regarding whether the conduct of Türkiye's monetary policy is asymmetric. Panel A reports the asymptotic distribution-free Bai and Ng (2005) symmetry test statistics and the sample skewness for the change in interest rate (ΔR), indicating that the test statistic (1.299) is positive. These results suggest that CBRT decreased lending rates more often than it increased lending rates between 2002 and 2024, and this statistic is statistically significant at the conventional 5% level (the level of statistical significance is at 5% unless otherwise mentioned). The

test statistic (1.449) is positive and statistically significant for the post-2006 era. We provide the percentage change in interest rate (ΔlogR) between 2002 and 2024 in the first column and between 2006 and 2024 in the next column. We observe that the test statistics are 2.950 and 2.582 for the respective periods. Although these statistics are not statistically significant, they suggest asymmetry. The next two columns in Table 2 report the corresponding statistics for the CBRT borrowing rate when interbank market participants deposit their funds with the CBRT. The statistics are recorded as 4.769 and 4.208 respectively for the related periods. We could not find any asymmetry for these statistics. The last two columns in Table 2 report the corresponding statistics for the O/N interbank interest rate, which are 4.944 and 4.371 respectively for the relevant sub-periods.

Table 2: Bai and Ng (2005) Asymmetry Tests

Period Between	LENDING		BORROWING		SIMPLE ON	
	2002-2024	*2006-2024*	*2002-2024*	*2006-2024*	*2002-2024*	*2006-2024*
Panel A: Skewness Test						
ΔR	1.299** (0.001)	1.449** (0.000)	1.452** (0.000)	1.495** (0.000)	1.588** (0.000)	1.678** (0.000)
ΔlogR	2.950 (0.187309)	2.582 (0.245677)	4.769 (0.256977)	4.208 (0.301896)	4.944 (0.241665)	4.371 (0.290041)
Panel B: Joint Test of the Third and Fifth Central Moments						
ΔR	142.856** (0.000)	91.141** (0.000)	191.584** (0.000)	124.369** (0.000)	286.063** (0.000)	217.962** (0.000)
ΔlogR	1668.558** (0.000)	713.753** (0.000)	37797.605** (0.000)	15647.389** (0.000)	43077.275** (0.000)	17928.327** (0.000)

Note: -p-values are reported in parentheses.
*Indicates the level of significance at 10%. **Indicates the level of significance at 5%.

As an alternative to skewness, the fifth moment (hyperskewness) can be used to analyze asymmetry. The fifth moment amplifies observations further from the mean, measuring the asymmetry of the distribution's tail. The asymmetry in the fifth moment suggests that when interest rates need to be increased, delaying action requires a larger change in interest rates later. Bai and Ng (2005) offer a joint test of the third (skewness) and fifth central moments; Panel B of Table 2 reports this statistic for our sample. According to Bai and Ng (2005) simulation results, the skewness test and joint test have similar-sized properties. However, the joint test has a smaller probability of *Type-I* error and is a more powerful test than using the third moment alone; they recommend the joint test when symmetry is the main concern. Panel B reveals that the joint test for the change and percentage change in lending rates for both periods is positively skewed and statistically significant. Moreover, unlike in the skewness test, borrowing rates are statistically significant for all sub-periods. Furthermore, the O/N interbank rates are statistically significant for all sub-periods. These results clearly suggest that CBRT is more likely to decrease rather than increase interest rates when needed. However, when the interest rate increases, the change is larger.

CONCLUSION AND DISCUSSION

This study investigates the role of psychological motives in the conduct of monetary policy in Türkiye. Specifically, we examine the relationship between delayed actions and psychological factors in the Central Bank of the Republic of Türkiye's (CBRT) interest rate decisions. Utilizing Bai and Ng's (2005) skewness and hyperskewness tests, we analyzed the asymmetry in interest rate adjustments over the periods between 2002 and 2024, and between 2006 and 2024. The aim was to determine whether psychological factors contribute to delayed actions in monetary policy, leading to an asymmetric pattern in interest rate changes.

Our empirical findings suggested by the asymptotic distribution-free Bai and Ng (2005) symmetry test statistics and the sample skewness for the change in interest rate that the distributions of changes and percentage changes in lending, borrowing, and overnight (O/N) interbank interest rates exhibit positive skewness and statistically significant hyperskewness. This indicates that the CBRT is more prone to decreasing interest rates than increasing them, possibly to avoid criticism. Moreover, when interest rate hikes do occur, they tend to be of larger magnitudes compared to reductions. Such asymmetry suggests the presence of psychological biases among policymakers, possibly stemming from aversion to criticism or overly optimistic expectations about future economic conditions. After adopting the inflation targeting regime in 2006, it is possible that the above findings could change. The statistics reported in Table 2 show that the results are robust after 2006.

Reluctance to raise interest rates in a timely manner can have adverse effects on the economy. Delayed increases may necessitate sharper adjustments later, exacerbating interest rate volatility and negatively impacting key economic variables such as output, consumption, and investment. Therefore, addressing the psychological factors influencing monetary policy decisions is crucial for enhancing the effectiveness of the CBRT's policies and ensuring economic stability.

In the light of the findings of the study, to mitigate the influence of psychological biases and improve the conduct of monetary policy, several technical measures can be proposed. Firstly, strengthening the legal and institutional framework governing the CBRT is essential. Implementing regulations that enhance the central bank's independence and accountability can ensure that policymakers base their decisions on objective economic indicators rather than external pressures. Secondly, adopting rule-based approaches in monetary policy formulation would be beneficial. Utilizing predefined policy rules can reduce discretionary biases and ensure that interest rate decisions respond consistently to changes in economic conditions. This approach can increase the predictability of monetary policy, thereby strengthening market participants' confidence. Thirdly, enhancing analytical capabilities is necessary. Investing in advanced economic modeling and forecasting tools will enable policymakers to conduct robust analyses of the economic outlook. Improved analytical support can help counteract cognitive biases by grounding decisions in empirical evidence. Fourthly, improving transparency and communication strategies is of great importance. Clearly articulating the rationale behind policy decisions can help manage market expectations effectively and reduce uncertainties arising from sudden or unexpected interest rate changes. Effective communication can limit the negative impact of psychological factors on both policymakers and market participants. Fifthly, regular review and assessment of policy processes should be ensured. Establishing mechanisms for periodic evaluation of monetary policy outcomes relative to set objectives allows for early detection of deviations from desired policy paths and timely corrective actions. This mechanism can continuously enhance the effectiveness of policy implementations. Lastly, developing and monitoring early warning indicators is recommended. Creating and regularly tracking indicators that signal emerging economic imbalances can facilitate proactive policy measures. This can reduce the need for sudden and large-scale interest rate adjustments.

Eventually, the presence of asymmetry in interest rate adjustments underscores the importance of addressing psychological factors within the monetary policy framework. By implementing the proposed technical measures, the CBRT can improve the timing and symmetry of its policy actions. This, in turn, can contribute to reducing interest rate volatility, stabilizing inflation expectations, and fostering sustainable economic growth.

Furthermore, our findings emphasize the importance of a balanced approach to policymaking that considers not only economic indicators but also the potential effects of human behavior on decision-making processes. Recognizing and mitigating psychological biases can lead to more effective policy outcomes and strengthen the credibility of the central bank. Accordingly, implementing legal and institutional reforms to protect the members of the MPC from political pressures could be a vital step. This could include terms of appointment that ensure longer tenure and protection against arbitrary dismissal; clear legal mandates that prioritize economic objectives such as price stability and financial stability; and statutory provisions that limit the government's ability to interfere in monetary policy decisions.

Future studies could explore the impact of other psychological factors on monetary policy decisions, such as quantitative easing or macroprudential regulations. Comparative analyses involving other central banks could provide broader insights into how psychological motives affect monetary policy in different institutional and economic contexts. Examining the interaction between monetary policy and financial market responses could also shed light on transmission mechanisms influenced by psychological factors. Besides, investigating the role of market participants' expectations and reactions to policy decisions could provide insights into the collaboration between psychology and monetary policy.

REFERENCES

ALESINA, A., ROUBINI, N. (1992). Political cycles in OECD economies. *The Review of Economic Studies*, 59(4), 663-688.

BAI, J., NG, S. (2005). Test for skewness, kurtosis and normality for time series data. *Journal of Business and Economic Statistics*, 23, 49-60.

BERNANKE, B., REINHART, V., SACK, B. (2004). Monetary policy alternatives at the zero bound: An empirical assessment. *Brookings Papers on Economic Activity*, 2004(2), 1-100.

BLINDER, A. S., EHRMANN, M., FRATZSCHER, M., De HAAN, J., JANSEN, D. J. (2008). Central bank communication and monetary policy: A survey of theory and evidence. *Journal of Economic Literature*, 46(4), 910-945.

BLUNT, A. K., Pychyl, T. A. (2000). Task aversiveness and procrastination: A multi-dimensional approach to task aversiveness across stages of personal projects. *Personality and Individual Differences*, 28, 153-167.

CENTRAL BANK OF THE REPUBLIC OF TURKEY (CBRT). (2015). *2014 Annual Report*. Retrieved from https://www3.tcmb.gov.tr/yillikrapor/2014/tr

CENTRAL BANK OF THE REPUBLIC OF TURKEY (CBRT). (2024). *Electronic Data Delivery System (EVDS)*. Retrieved from https://evds2.tcmb.gov.tr

DE BONDT, G. (2015). Confidence and monetary policy transmission. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.2608364

DUPRAZ, S., GUILLOUX-NEFUSSI, S., PENALVER, A. (2023). A pitfall of cautiousness in monetary policy. *International Journal of Central Banking*, 19(3), 269-323.

JIMÉNEZ, M. (2023). *Europe | ECB swimming in troubled waters*. Retrieved from https://www.bbvaresearch.com/en/publicaciones/europe-ecb-swimming-in-troubled-waters

FERNANDEZ-VILLAVERDE, J., GUERRON-QUINTANA, P., RUBIO-RAMIREZ, J. F., URIBE, M. (2011). Risk matters: The real effects of volatility shocks. *American Economic Review*, 101(6), 2530-2561.

GERTLER, M., KARÁDI, P. (2015). Monetary policy surprises, credit costs, and economic activity. *American Economic Journal: Macroeconomics*, 7(1), 44-76.

GOLLWITZER, P. M. (1990). Action phases and mind-sets. In E. T. Higgins & R. M. Sorrentino (Eds.), *The Handbook of Motivation and Cognition: Foundations of Social Behavior* (Vol. 2, pp. 53-92). New York, NY: Guilford Press.

IHLAS NEWS AGENCY (IHA). (2014, July 2). Turkey's exports in June was $12.54 billion dollar. Retrieved from https://www.milliyet.com.tr

KAHNEMAN, D., TVERSKY, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica*, 47(2), 263-291.

KLINGSIECK, K. B. (2013). Procrastination: When good things don't come to those who wait. *European Psychologist*, 18(1), 24-34.

KROKIDA, S. I., MAKRYCHORITI, P., SPYROU, S. (2020). Monetary policy and herd behavior: International evidence. *Journal of Economic Behavior & Organization*, 170, 386-417.

MAYRAZ, G. (2011). Wishful thinking. *SSRN Electronic Journal*. Retrieved from https://ssrn.com/abstract=1955644

MORIMOTO, K. (2021). Information use and the condorcet jury theorem. *Mathematics*, 9(10), 1098.

OKHRYMENKO, I., BILOSHAPKA, V. (2022). Strengthening monetary policy and managing inflation expectations in Ukraine in conditions of maritime. *VUZF Review*, 7(3), 49.

ORPHANIDES, A. (2001). Monetary policy rules based on real-time data. *American Economic Review*, 91(4), 964-985.

PROCEE, R., KAMPHORST, B. A., WISSEN, A. (2013). A formal model of procrastination. In M. De Weerdt, B. Van Riemsdijk, K. Hindriks, & M. Warnier (Eds.), *Proceedings of the 25th BNAIC* (pp. 152-159).

SCHEIER, M. F., CARVER, C. S. (1985). Optimism, coping, and health: Assessment and implications of generalized outcome expectancies. *Health Psychology*, 4(3), 219-247.

SENT, E. M. (2004). Behavioral economics: How psychology made its (limited) way back into economics. *History of Political Economy*, 36(4), 735-760.

SIBERT, A. (2006). Central banking by committee. *International Finance*, 9(2), 145-168.

SURICO, P. (2007). The Fed's monetary policy rule and U.S. inflation: The case of asymmetric preferences. *Journal of Economic Dynamics and Control*, 31(1), 305-324.

TURKISH STATISTICAL INSTITUTE (TURKSTAT). (2024). *Consumer Price Index*. Retrieved from https://data.tuik.gov.tr

WEINSTEIN, N. D. (1980). Unrealistic optimism about future life events. *Journal of Personality and Social Psychology*, 39(5), 806-820.