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Abstract

Monetary policy plays a central role in stabilizing macroeconomic fluctuations. In addition to monetary policy, uncertainty in monetary policy associated with uncertainty in interest rates is an important determinant of economic decisions. In this paper, we analyze the effect of interest rate uncertainties for different maturities on industrial production, inflation, unemployment, and exchange rate for Turkey using the VAR model. Since the dominant position of the US economy in global financial markets implies uncertainty about how the monetary policy of the US (MPU) may impact foreign economies, we also discuss the impact of MPU uncertainty on the variables of interest. Although the effect varies across the different maturities of the yield, our findings suggest that interest rate uncertainty reduces the growth of industrial production, increases unemployment, and depreciates the exchange rate. Additionally, inflation increases in response to interest rate uncertainty shocks. Finally, while a shock in MPU uncertainty tends to significantly increase unemployment, it decreases the growth of production.

Keywords: Uncertainty, interest rate, VAR model, macroeconomics.
JEL Classifications: E43, E52, E58.

الملخص

تلعب السياسة النقدية دورًا مركزيًا في استقرار تقلبات الاقتصاد الكلي. وإلى جانب السياسة النقدية، يعد عدم اليقين في السياسة النقدية المرتبط بعدم اليقين في أسعار الفائدة أحد المحددات المهمة للقرارات الاقتصادية. في هذه الدراسة، يتم تحليل تأثير عدم اليقين في سعر الفائدة لآجال الاستحقاق المختلفة على الإنتاج الصناعي، والتضخم، والبطالة، وسعر الصرف في تركيا باستخدام نموذج متجه الانحدار الذاتي. نظرًا لأن الوضع المهيمن للاقتصاد الأمريكي في الأسواق المالية العالمية يشير إلى أن عدم اليقين في السياسة النقدية الأمريكية قد يكون له تأثيرًا على الاقتصادات الأجنبية، كما تناولت الدراسة تأثير عدم اليقين في السياسة النقدية الأمريكية على متغيرات الفائدة. وعلى الرغم من أن التأثير يختلف باختلاف فترات الاستحقاق للعائد، تشير النتائج إلى أن عدم اليقين في سعر الفائدة يقلل من نمو الإنتاج الصناعي، ويزيد البطالة، ويقلل من سعر الصرف. وبالإضافة إلى ذلك، يرتفع التضخم نتيجة لصدمات عدم اليقين في أسعار الفائدة. وأخيرًا، تميل صدمات عدم اليقين في السياسة النقدية الأمريكية إلى زيادة البطالة زيادةً ملحوظة، بالإضافة إلى أنها تقلل من نمو الإنتاج.

1. Introduction

Monetary authorities can affect the behavior of economic agents by changing the interest rate, and uncertainty in the interest rate can be associated with uncertainty in monetary policy. In other words, uncertainty in monetary policy implies potential future changes in interest rates.

In general, uncertainty tends to influence decisions about consumption, investment, trade, or employment. Uncertainty in the interest rate can be expected to affect the economy in various ways. For example, uncertainty in interest rates increases the risk of holding bonds. In this situation, economic agents prefer to increase their money holdings, and as the money demand increases, interest rates increase. Higher levels of interest rates reduce investment and output. In addition, interest rate uncertainty in a country makes its economy's debt riskier and discourages capital inflows. Central banks try to ensure that the public has more accurate expectations about the future course of monetary policy and interest rates by following transparent policies. Reduced uncertainty about interest rates allows for a more accurate estimation of financial costs. Thus, the decrease in the public's risk perception positively affects investment decisions and firm hiring activity.

Although the traditional understanding entails that reducing volatility about the future direction of the interest rate has a positive impact on the economy, the effect of the uncertainty in the interest rate may differ according to the country's economic and institutional structure. For example, economies reliant on manufacturing industries that require long-term projects are more sensitive to interest rate uncertainty. Further, in countries with strict labor market regulations, it is difficult to lay off according to changes in expectations. On the other hand, by using the same data, economic decision makers may have different expectations about how interest rates will change in the future. In this paper, we empirically investigate the relationship between interest rate uncertainty and macroeconomic variables in Turkey.

In Turkey, since the 2001 crisis, the transition to inflation targeting was launched and implicit inflation targeting was adopted from January 2002 to December 2005. The explicit inflation targeting regime started to be implemented in January 2006. In this policy framework, the main policy tool adopted is the usage of short-term rates. Following the implementation of inflation targeting, the link between interest rate and spending decisions has been strengthened (see Başçı, Özel, and Sarıkaya, 2008; Kara et al., 2007). Although the monetary policy transmission mechanism for Turkey is widely investigated (see, for example, Us, 2004; Aydın, 2007; Kara et al., 2007; Başçı et al., 2008), to the best of our knowledge, the effect of interest rate uncertainty on macro variables has not been analyzed.

In light of the recent global crisis, the Central Bank of the Republic of Turkey (CBRT) has been implementing a new monetary policy concerning both financial stability and price stability. New policy tools, such as the interest rate corridor, have been adopted to achieve these goals. According to this policy, the policy interest rate of the CBRT fluctuates within

the band and the CBRT has the ability to increase uncertainty about the future path of the policy rate by widening this corridor. This policy is already a source of uncertainty on its own. In addition to this policy change, other factors also lead to uncertainty in monetary policy in Turkey. These factors can be listed as follows: frequent changing of the CBRT governor, interest rate cuts to support economic growth through consumption, and interventions in the foreign exchange market. In this context, we investigate the relationship between uncertainties in the interest rates and macroeconomic variables in Turkey. Understanding how interest rate uncertainties affect macroeconomic variables can be a guide for central banks in planning monetary policies.

In addition to countries' own monetary policies, the Federal Open Market Committee's (FOMC) monetary policy decisions are closely followed by investors around the world due to countries' trade integration and financial links with the US. In addition, the dominant position of the US economy in global financial markets causes economies that are not geographically close to the US (or less integrated in terms of trade) to be affected by the monetary policy of the US (MPU). Lastauskas and Nguyen (2021) state that monetary policy uncertainty can be the source of global business cycles. Considering the arguments that MPU uncertainties significantly affect other economies, we also investigate the effects of uncertainty in the MPU on the Turkish economy. To the best of our knowledge, this effect has not been analyzed for Turkey in previous studies.

According to our findings, the immediate impact of a shock in policy rate uncertainty on the exchange rate is depreciation, followed by temporary appreciation. Uncertainty in the 10-year yield has a similar impact on the exchange rate. That is, uncertainty in the interest rate causes volatility in the real exchange rate. If we consider inflation, we observe that shocks of interest rate uncertainty lead to an increase in inflation. The effect of uncertainty on the policy rate is quantitatively more important and long-lived than the uncertainty in longer yields. We see that the response of the growth of industrial production to uncertainty in the two- and 10-year yield shocks are negative. Additionally, we observe that unemployment worsened in response to a shock in the two-year yield uncertainty. Finally, we consider the response of Turkish macroeconomic variables to a shock in MPU uncertainty. We find that a shock in MPU uncertainty increases unemployment and decreases the growth of production.

Our data cover the period between January 2002 to December 2020. Considering the potential of a structural break in the results due to the mid-2010 regime change, we also estimate our model for the period before and after 2010. In addition, we analyze the reaction of industrial production to interest rate uncertainties for three sub-industry branches.

The paper is organized as follows. In section 2, we present the existing literature. Our methodology is provided in section 3, while section 4 presents the estimation results. Finally, the last section discusses policy implications and provides concluding remarks.

2. Literature review

There is a growing strand of empirical and theoretical literature that investigates the effect of uncertainty on macroeconomic variables and monetary policy (see, for example, Bloom, 2009; Bake, Bloom, and Davis, 2015; Aastveit, Natvik, and Sola, 2013; Fernandez-Villaverde et al., 2011; Bekart, Hoerova, and Lo Duca, 2013; Ludvigson, Ma, and Ng, 2015; Ulrich, 2012; Pastor and Veronesi, 2012; Öge Güney, 2016). A limited number of studies analyze the macroeconomic effects of uncertainty in interest rates. For example, Creal and Wu (2017) investigate the relationship between interest rate uncertainty and selected macro variables for the US. They decompose the long-term interest rate into two components: risk premium uncertainty and monetary policy uncertainty. Using a VAR model, they show that uncertainty has a negative effect on economic activity. In addition, they find that monetary policy uncertainty and term premium uncertainty react in opposite directions to the unemployment rate. Istrefi and Mouabbi (2016) analyze the short- and long-term impact of uncertainty in interest rates on the economy in 10 developed countries. According to their findings, interest rate uncertainty has a negative effect on unemployment and industrial production. In addition, they show that uncertainty in short-term rates has stronger quantitative effects on the economy relative to uncertainty in long-term rates. Using a vector autoregression, Bundick, Trenton, and Smith (2017) find that declines in uncertainty in the interest rate lead to an increase in industrial production and inflation for the US.

Fasolo (2019) finds that an increase in monetary policy volatility (i.e., unexpected decisions about interest rates) causes higher inflation and lower output in Brazil. According to his findings, unexpected changes in monetary policy depreciate the exchange rate. In contrast, Benigno et al. (2012) provide evidence that monetary policy volatility shocks cause an appreciation of the domestic currency. Using an SVAR model, Mumtaz and Zanetti (2013) show that monetary policy volatility shocks have a positive correlation between prices and output level for the US. Mumtaz and Theodoridis (2020) show that monetary policy shocks increase macroeconomic volatility. Husted et al. (2017) show that greater monetary policy uncertainty raises credit cost and reduces output.

Some papers analyze the impact of MPU uncertainty on other economies. Park et al. (2020) show that MPU uncertainty tends to increase the volatility in the exchange rate for some Asian economies. Bhattarai et al. (2020) emphasize that US stock market uncertainty has an adverse effect on some macroeconomic variables in emerging countries, such as exchange rate, output, and inflation. Lastauskas and Nguyen (2021) state that US interest rate uncertainty can be the source of global business cycles. According to their findings, the magnitudes of the negative effect of monetary policy uncertainty on economies depend on cross-country interdependence. Lakdawala et al. (2021) show that MPU uncertainty has a significant effect on global bond and equity markets. They also find that, in developing countries, the response to uncertainty is closely related to the country's financial openness.

For Turkey, there are few studies in the literature covering monetary policy uncertainty. Aktaş et al. (2009) investigate the effect of policy rate changes on financial markets by separating

monetary policy into expected and unexpected components. They show that monetary surprises have a significant effect on financial markets. Çevik and Erduman (2020) construct a survey-based measure of monetary policy uncertainty for Turkey. They then find that uncertainty in monetary policy has a negative effect on economic activity in Turkey.

3. Methodology and analysis

The main question of our study is whether the interest rate uncertainty is a matter for the Turkish economy. To answer this question, we investigate the responses of growth of industrial production, inflation, unemployment, and exchange rate to interest rate uncertainties for different maturities.

Following the recent literature that investigates the relationship between uncertainty and the macroeconomy, we use a VAR model and impulse responses (see, for example, Baker, Bloom, and Davis, 2016; Jurado, Ludvigson, and Ng, 2015; Bekaert, Hoerova, and Lo Duca, 2013; Aastveit, Natvik, and Sola, 2013; Creal and Wu, 2017). This method allows us to examine the interaction of variables with each other. In addition, necessary constraints can be placed on the model.

The VAR model is presented as:

$$z_t = A_0 + A_1 z_{t-1} + \cdots + A_p z_{t-p} + u_t$$
$$t = 1, \dots, T$$

A_i is the (nxn) matrix. u represents the (nx1) vector of error terms. z_t is the (nx1) vector of time series. p represents the maximum lag in the VAR model. The lag length is selected based on the Akaike Information Criterion. $E(u_t) = 0$, $E(u_t, u_t') = \theta$, $E(u_t, u_{t-k}') = 0$ for any non-zero k.

$$z_t = (INF, IP, REXC, UNEMP, OIL, Uncertainty\ measures)$$

Our VAR model includes the interest rate uncertainty measures, industrial production (IP), inflation rate (INF), real exchange rate (REXC), and the unemployment rate (UNEM) as endogenous variables. In addition, we include oil prices (OIL) as an exogenous variable. We use a CPI-based real effective exchange rate. Since the real effective exchange rate and unemployment variables are non-stationary at the level, we use the first difference of their log. We use the log of seasonally-adjusted industrial production series. The percentage change in the Consumer Price Index presents the inflation series. Data on crude oil prices in USD per barrel are the price of Dubai Fateh crude oil. We focus on different yield uncertainties. Firstly, we use the CBRT policy rates as a measure of short-term interest rates (unc_policy rate). In addition, we use two-year Treasury Bill rates (unc_2Y bond yield) because they are accepted as a benchmark interest rate in Turkey. Following Istrefi and Mouabbi (2016), we use 10-year Treasury Bill rates as a measure of long-term interest rates (unc_10Y bond yield).

To investigate whether the MPU uncertainty is a matter for the Turkish economy, we use the MPU index for the US economy obtained from Baker, Bloom, and Davis (2016) (mpuusa). To construct the MPU index, they identify the occurrence of certain keywords in newspaper articles.

In the literature, different methods are used to measure uncertainty (see Lensink, 2002). Given the advantages (see Grier and Perry, 2000) and following Caporale and McKiernan (1998), we use the generalized autoregressive conditional heteroskedasticity (GARCH) models to measure uncertainty in the interest rates. We use the following GARCH model provided by Bollerslev (1986) to achieve the interest rate uncertainty series. The time-varying variance of the unforeseen part of the GARCH model (h_t) is taken as an uncertainty. It is assumed that h_t is a linear function of past squared errors and past variances.

$$y_t = \beta_0 + \sum_{j=1}^{q} \beta_j y_{t-1} + \varepsilon_t \quad (1)$$

$$h_t^2 = \alpha_0 + \alpha_1 \varepsilon_{t-1}^2 + \alpha_2 h_{t-1}^2 \quad (2)$$

where y_t is the variable the volatility of which we desire to find, ε_t is stochastic processes with zero mean. h_t is a conditional variance of interest rate.

Since implicit inflation targeting started to be implemented at the beginning of 2001, we use monthly data from January 2002 to December 2020. The data are gathered from the International Monetary Fund's International Financial Statistics (IFS) and the CBRT's Electronic Data Delivery System (EDDS). The data of two- and 10-year government bond rates are obtained from investing.com. The MPU index for the US economy is obtained from Baker, Bloom, and Davis (2016). The data availability enables our VAR model, with two- and 10-year government bond rate uncertainty, to cover the period from November 2006 to December 2020 and from February 2010 to December 2020, respectively.

4. Empirical results

For the VAR model to be applied, all variables included in the model must be stationary. The results of the unit root tests of the variables are presented in Table 1.

Table 1. ADF unit root test results

	Intercept	Trend and intercept	No trend and no intercept
INF	-9.432*	-9.004*	-6.174*
IP	-15.793*	-15.763*	-15.560*
REXC	-11.754*	-11.886*	-11.712*
UNEMP	-4.219*	-4.284*	-4.189*
OIL	-10.164*	-10.230*	-10.176*
unc_policy rate	-5.236*	-5.431*	-0.636
unc_2Y bond yield	-11.229*	-11.199*	-11.255*
unc_10Y bond yield	-9.733*	-9.693*	-9.751*
mpuusa	-7.463*	-7.473*	-2.756*

Note: * denotes the significance of the coefficient at the one percent level.

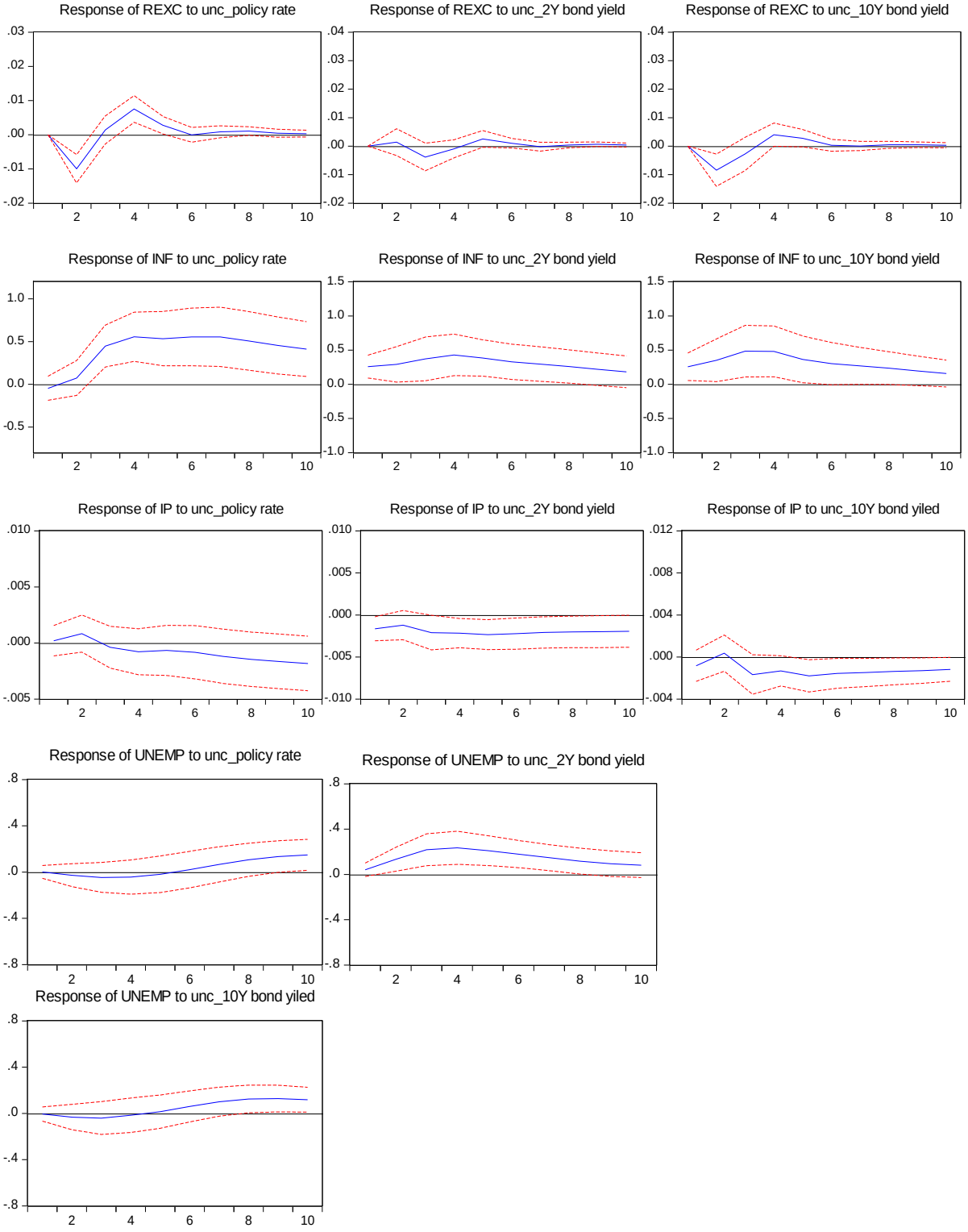
The effects of different yield uncertainties on the real exchange rate, inflation, industrial production, and unemployment were assessed by impulse response functions. The ordering in computing impulse responses was real exchange rate, interest rate uncertainty, inflation, industrial production, and unemployment rate, assuming that the real exchange rate is the most exogenous variable in the model. However, our results were not affected when we changed the ordering of the variables.

We provide the impulse response functions in Figure 1. The dotted lines show the two standard error bands used as a measure of statistical significance. We present the impulse responses to innovations to uncertainty in the policy rate and two- and 10-year treasury bill rates in the first, second, and third columns, respectively.[2]

As shown in Figure 1, an unexpected increase in policy rate uncertainty causes volatility in the real exchange rate. In response to this uncertainty, the real exchange rate temporarily depreciates within the two months after the shock. In addition, increases in policy rate uncertainty lead to a temporary appreciation of the real exchange rate. Similarly, uncertainty in the long yield causes an immediate but short-lasting depreciation in the real exchange rate followed by weak and short-lasting appreciation. However, the appreciation effects are not statistically significant. On the other hand, the effect of uncertainty on the two-year Treasury Bill rates on the real exchange rate is not different from zero.

[2] To test the robustness of the results, we use another measure for interest rate uncertainty obtained from the CBRT's survey of expectations. We took the series of the standard deviation of the expected policy rate. The data available enable our VAR model to cover June 2010 to October 2020. This estimation did not cause a significant change in our results.

Figure 1. Impulse responses to interest uncertainty shock



Note: Figure presents the response of the Turkish macroeconomy to a shock in the interest rate uncertainty for different yields. The dotted lines show the two standard error bands used as a measure of statistical significance. VARs include a constant, a time trend, and oil prices as an exogenous variable. Horizontal axis is in months.

As shown in the second row of Figure 1, the inflation rate increases following a positive policy rate uncertainty shock. The response takes three months to reach its maximum level

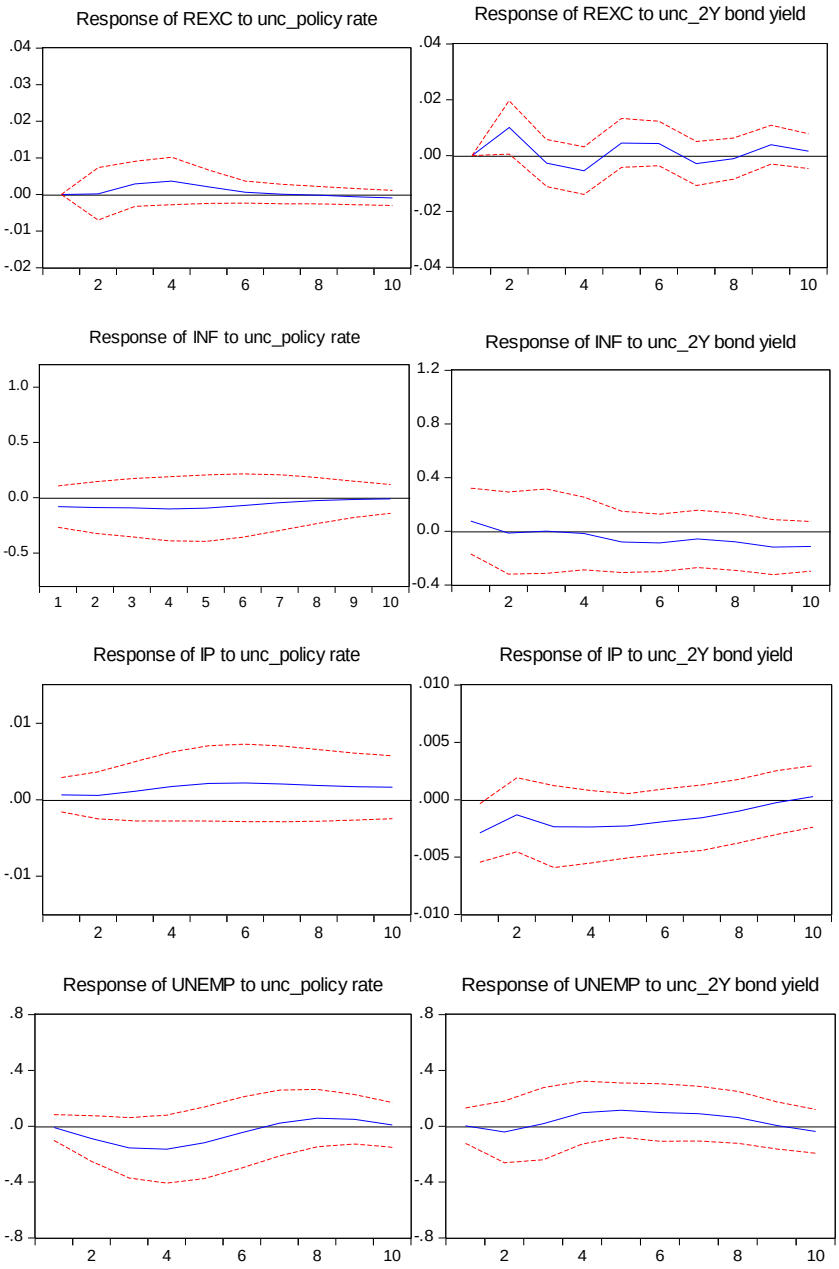
and remain effective for a long time. Inflation responds immediately and positively to uncertainty in two- and 10-year yield shocks, with rates increasing around 0.5 percentage points after three months of these shocks. The response to the two-year yield shock is significantly positive up to seven months. The effect of uncertainty on the 10-year yield shock is relatively short-lived.

We observe that a positive policy rate uncertainty shock causes a short-lived increase in the growth of industrial production followed by a long-lasting decline. However, the effects of policy rate uncertainty shock on the growth of industrial production are not statistically significant. The growth of industrial production responds negatively to the uncertainty in the long yield shocks, and these responses are statistically significant from three to four months after the shocks. It seems that, despite its significance, the decline in the growth of industrial production is not quantitatively relevant.

If we look at the effect of shocks in the interest rate uncertainty on unemployment, we note that when there is a shock in the policy rate uncertainty, it leads to a decrease in unemployment for up to five months. However, this effect is statistically insignificant. Around eight months after the shock, the unemployment rate responds positively and significantly to the uncertainty shock, with a rate of approximately 0.15 percentage points. The response of unemployment to a 10-year treasury bill uncertainty shock displays similar dynamics. The response is insignificantly negative for up to four months. Around seven months after the shock, the unemployment rate responds significantly and positively to the long-yield uncertainty shock. In the case of an uncertainty shock in the two-year yield, the unemployment rate immediately responds with an increase and this response continues for seven months. That is, unemployment worsens in response to a shock in interest rate uncertainty.

With the effects of the global crisis, the CBRT took the first policy steps in mid-2010 within the scope of observing financial stability without compromising price stability. Taking into account this policy change and considering that the response of the economy to interest rate uncertainly may depend on this policy change, we estimate our VAR model for before and after June 2010. Figure 2 presents our estimates for the period covering January 2002 to May 2010. As the figure shows, the responses of macroeconomic variables to uncertainty in the policy rate and two-year yield shocks are statistically insignificant. Figure 3 presents the estimation result for the period June 2010 to December 2020. We observe that the response of the real exchange rate, unemployment, and inflation to a policy rate uncertainty shock displays similar dynamics in the whole period. Contrary to the findings obtained when evaluating the entire period, the growth in industrial production reacts negatively to the policy rate uncertainty shock in this period.

Figure 2. Impulse responses to interest uncertainty shock (January 2002 to May 2010)



We expand our analysis of the reaction of industrial production to the uncertainty in the interest rate by considering three subsectors: mining and quarrying (mining), manufacturing, and electricity, gas, steam, and air conditioning supply (electricity). This is because some industries may be more sensitive to interest rate uncertainties and will likely respond differently to long-run versus short-run maturities. As seen in Figure 4, the reaction of the mining industry to interest rate uncertainty in different maturities is not statistically significant. The production of the manufacturing sector, on the other hand, responds to the two- and 10-year yield shock with a decline. This response is stronger for two-year yield rate uncertainty. Finally, two-year interest rate uncertainty causes a decline in electricity industry production.

Figure 3. Impulse responses to interest uncertainty shock (May 2010 to December 2020)

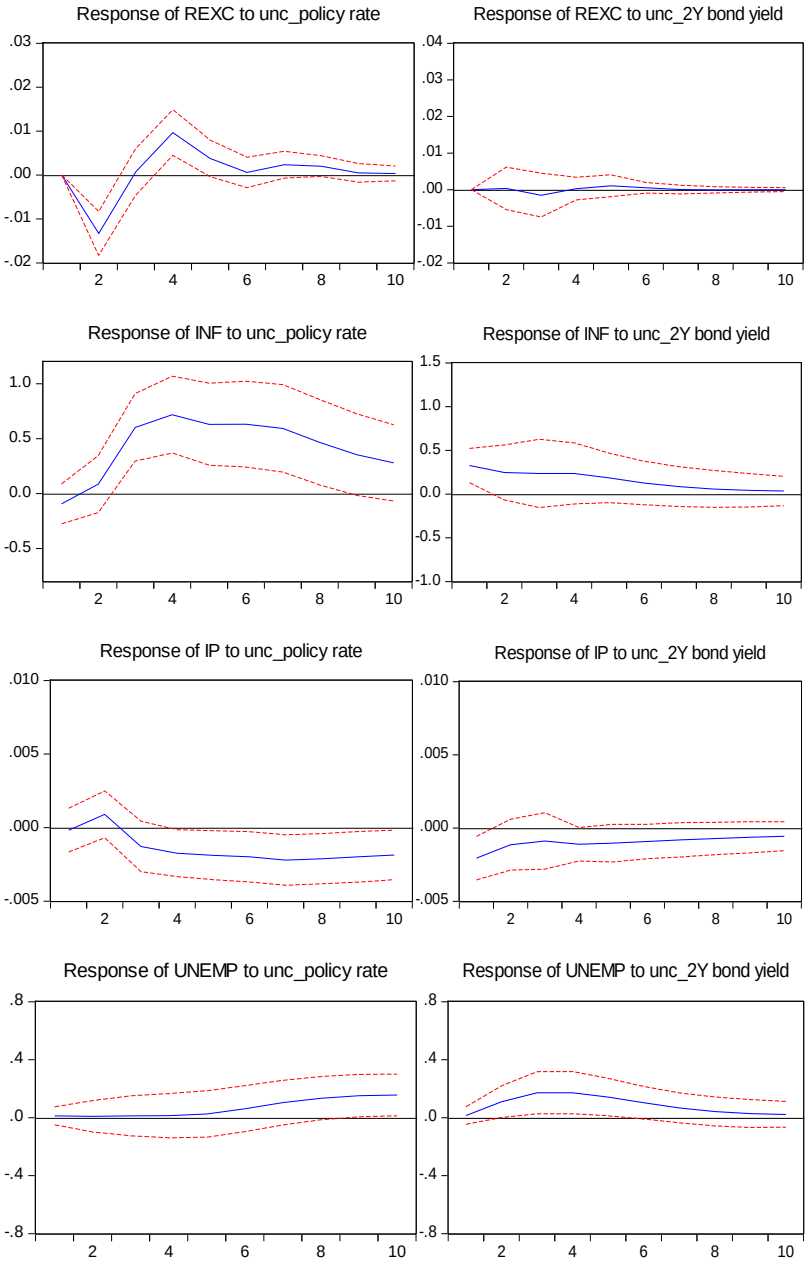


Figure 5 presents our results for sub-periods. For the January 2002 to May 2010 period, we find that the effects of uncertainty in policy rate on the production of all industries are not statistically significant. When we consider the period between June 2010 to December 2020, apart from the findings for the pre-period, we see that the uncertainty in the policy rate causes a decline in the production of the manufacturing industry. Finally, manufacturing and electricity production responds negatively to the uncertainty in the two-year yield shocks, and the response of electricity production is statistically significant between three and six months after the shocks.

Figure 4. Impulse responses to interest uncertainty shock (January 2002 to December 2020 period, for the 10-year bond yield during the November 2006 to December 2020 period)

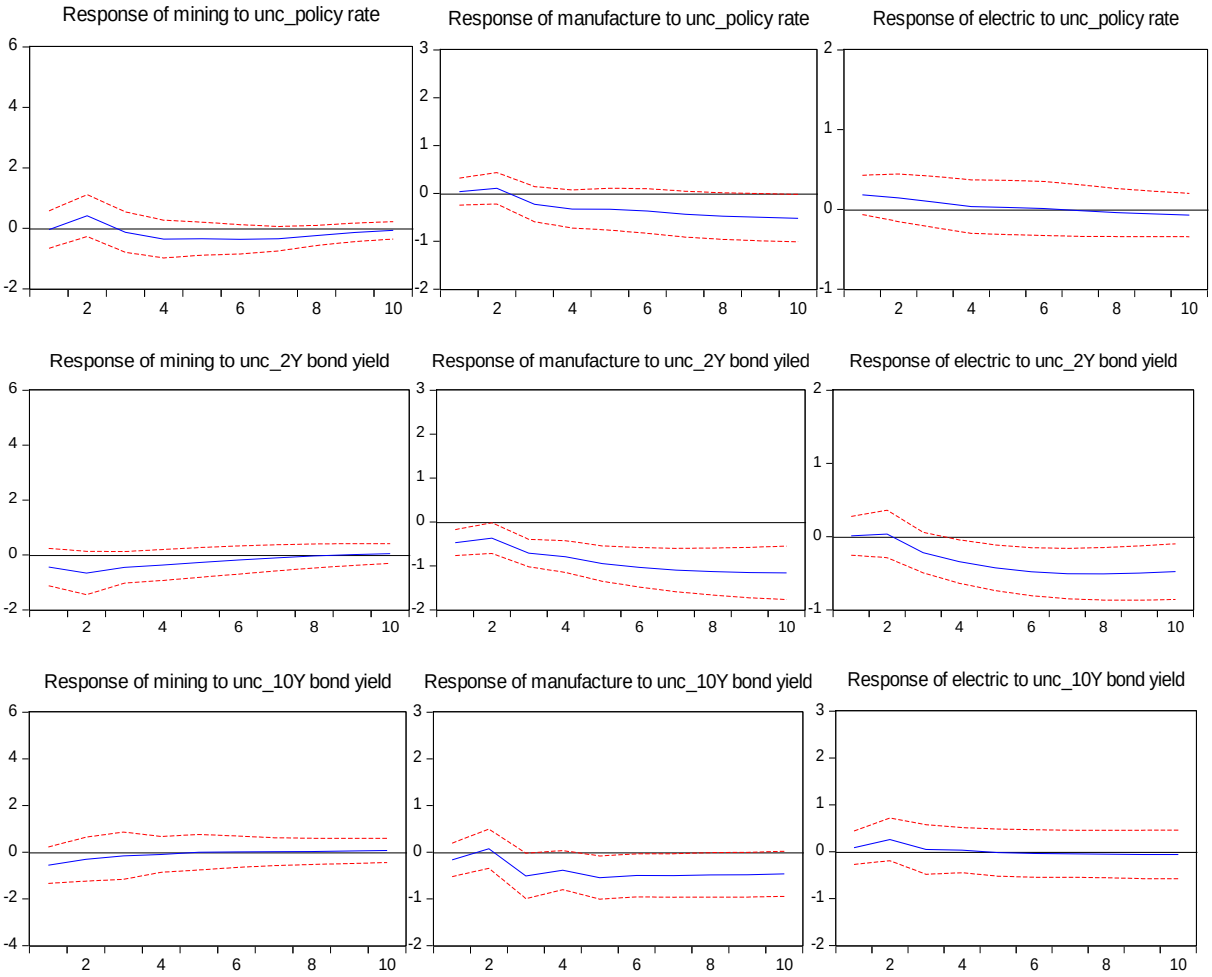
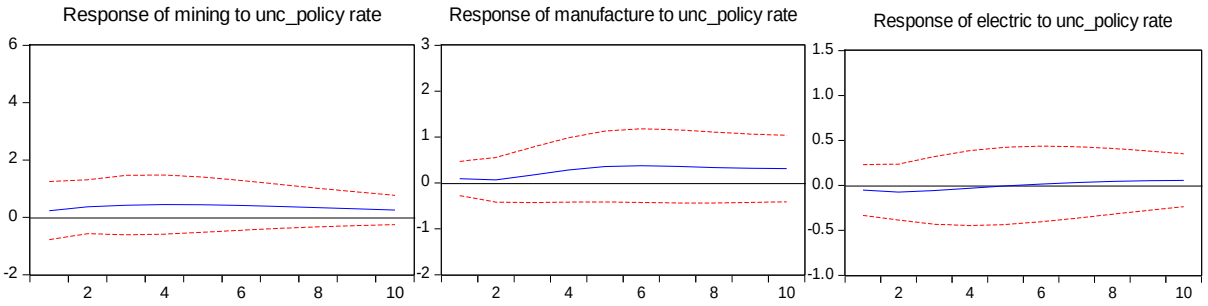


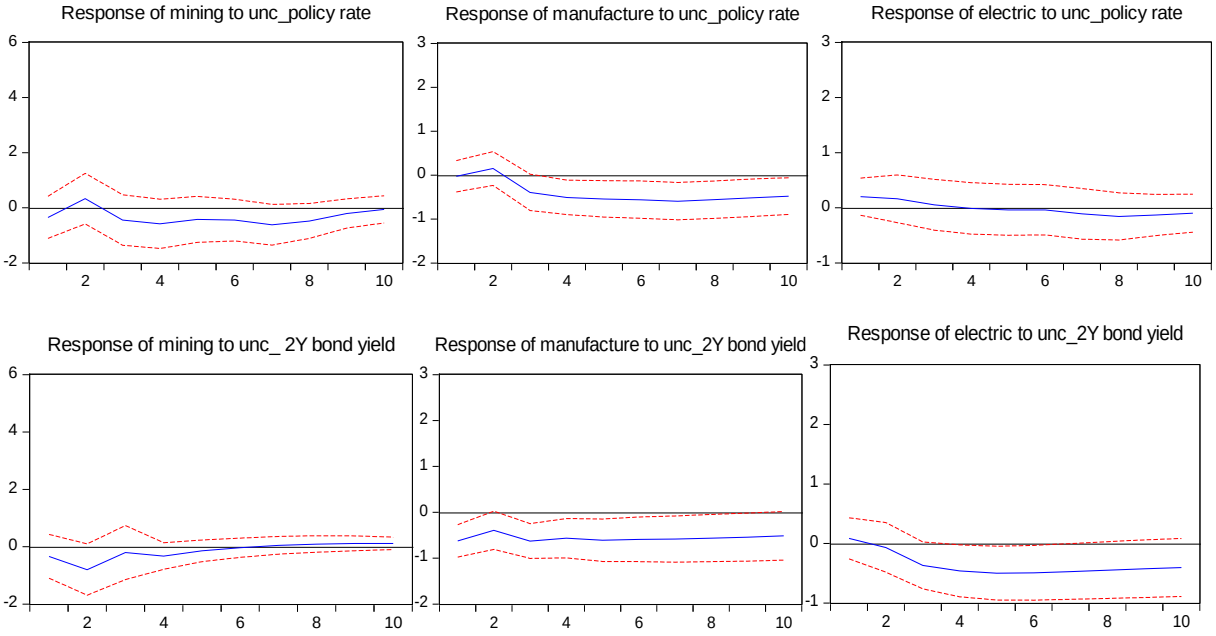
Figure 6 provides the impulse responses of the real exchange rate, industrial production, inflation, and unemployment to an MPU uncertainty shock. We observe that the effect of an MPU shock on inflation and real exchange rate are not different from zero. In the case of industrial production, we see that the reaction of growth of industrial production to the MPU shock is negative and long-lived. Finally, we observe that unemployment reacts by a rise of two percentage points to the MPU shock. This impact on unemployment occurs in the short term and becomes insignificant four months following the shock.

Figure 5. Impulse responses to interest uncertainty shock (Panel "a" presents the January 2002 to May 2010 period, while panel "b" presents the June 2010 to December 2020 period)

(a)

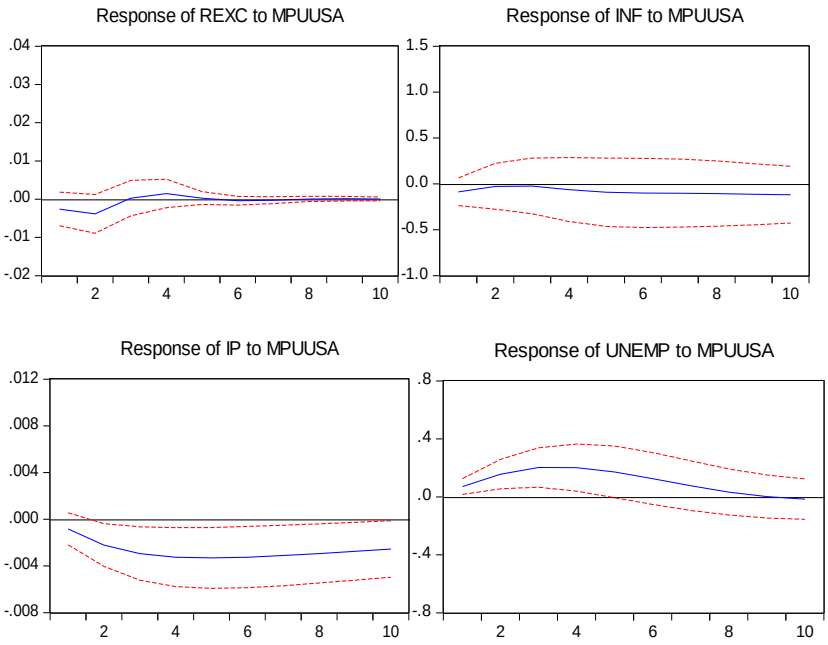


(b)



Note: Since there is sufficient data for the period January 2002 to May 2010 only for the policy interest rate, the estimation is made only for this variable.

Figure 6. Impulse responses to an MPU uncertainty shock



Note: Figure presents the response of the Turkish macroeconomy to a shock in MPU uncertainty. The dotted lines show the two standard error bands used as a measure of statistical significance. VARs include a constant, a time trend, and oil prices as an exogenous variable. Horizontal axis is in months.

5. Policy implications and conclusion

Making economic decisions entails considering expected outcomes and enabling people to have a vision of what the future will look like. While uncertainty about the future is always present, large increases in uncertainty can make forward-looking decisions even more difficult. These uncertainties do not only arise from countries' own uncertainties but also from uncertainties from abroad. Due to the dominant position of the US economy in global financial markets, MPU uncertainty may have an impact on other economies. Our study presents the macroeconomic implications of uncertainties regarding Turkey's own interest yields and the MPU.

According to our findings, although it is not quantitatively relevant, shocks to long-yield uncertainties have a negative effect on the growth of industrial production. In addition, unemployment worsens in response to a shock in interest rate uncertainty. The response of unemployment to two-year yield uncertainty is high in magnitude and persistent. It seems that interest rate uncertainty is recessionary; in other words, it increases unemployment and decreases economic growth. When we consider the inflation rate, we observe that inflation increases in response to interest rate uncertainty shocks. The effect of policy rate uncertainty on inflation is quantitatively large. If we look at the response of the exchange rate, we observe that uncertainty in the interest rates causes volatility in the real exchange rate. Overall, our results put forth the importance of reducing uncertainties about interest rates to achieve economic stability.

Considering the potential of the structural break in the results due to the mid-2010 regime change, we estimate our model for the period before and after 2010. For the period of January 2002 to May 2010, we find that the responses of macroeconomic variables to uncertainty in the policy rate and two-year yield shocks are statistically insignificant. For the period of June 2010 to December 2020, the growth of industrial production responds negatively to uncertainty in the policy rate shock, which differs from when we consider the whole period.

Since some industries may be more sensitive to interest rate uncertainties and will likely respond differently to long-run versus short-run maturities, we analyze the response of industrial production by dividing it into three subtitles. According to our estimates, while the reaction of the mining industry to interest rate uncertainty in different maturities is not statistically significant, the production of the manufacturing sector responds to the two- and 10-year yield shock with a decrease. Similarly, a two-year interest rate uncertainty causes a decrease in electricity industry production.

Finally, we observe that an MPU shock leads to a long-lived decline in the growth of industrial production. In addition, unemployment increases following an MPU shock. These findings indicate that MPU uncertainty can be one of many sources of the decline in output growth and the increase in the unemployment rate for Turkey. This may be due to the fact that MPU uncertainty is seen as a source of uncertainty by investors in Turkey. The degrees of trade and financial integration with the US may lead this response.

To reach their goals, central banks should be able to influence expectations regarding the future path of the interest rate. However, uncertainties in the interest rate can weaken this effect. If interest rate uncertainties represent a negative element for the effectiveness of the monetary policy, we can conclude that our findings provide evidence for the importance of transparency, clear communication, and the accountability of central banks. That is, central banks can use these tools to alleviate interest rate uncertainty. Mishkin (2000) examined the principles that central banks should follow to avoid causing uncertainty. Accountability, transparency, and communication are some of those principles. By reducing the uncertainty in the interest rate, economic agents can be enabled to plan, invest, and trade with little need for hedging.

Although the central bank's clear communication with the public plays an important role in reducing the uncertainty about the future path of interest rates, the central bank may not be able to implement its plans due to unexpected macroeconomic developments. Most economic policies respond to underlying economic conditions. Therefore, it is impossible to accurately predict the policy if there is uncertainty about the underlying conditions. While it is impossible to eliminate all economic uncertainty, it can be helpful to set clear policy targets. In this case, at least the monetary policy itself will not be a source of uncertainty.

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