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Research article

Stabilizing inflation expectations in China: Does economic policy uncertainty matter?

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Abstract: In this paper, we evaluate the impact of economic policy uncertainty shocks on inflation expectations in China by using a MF-VAR approach. We find that China's inflation expectations are sensitive to policy-related uncertainty shocks. Meanwhile, there exist heterogeneous impacts of national economic policy uncertainty shocks on inflation expectations in China. Overall, the inflation expectations in China rise in response to the European, Japanese and China's own uncertainty shocks. Whereas, the reaction of the inflation expectations in China to the uncertainty shocks made by both the US and BRICS (except China and South Africa) is negative. The results also reveal that the policy-related uncertainty shocks are dominant driving force of the inflation expectations in China especially during the post-crisis period. In addition, the contribution of China's domestic uncertainty shocks is remarkably higher than that of foreign uncertainty shocks.

Keywords: inflation expectations; domestic economic policy uncertainty; economic policy uncertainty spillovers; MF-VAR model

JEL Codes: D81, E02, E31

1. Introduction

Recognizing the impact of economic policy uncertainty on inflation expectations will be beneficial for macroeconomic policymaking and management. Since inflation expectations play a key role in shaping the actual inflation rates and have an influence on other macroeconomic indicators (Coibion et al., 2018a; Hammoudeh and Reboredo, 2018; Lee and Wang, 2017; Malmendier and Nagel, 2016; Serdar and Ismet, 2019), inflation expectations management has been used as an important policy tool for stabilization purposes by an increasing number of countries including China (Coibion et al., 2018b; Lei et al., 2015). In this sense, it is critical to identify the determinants of inflation expectations. Policy-related uncertainty, which is regarded as a prominent contributor to the overall economic uncertainty in recent years (Istrefi and Piloiu, 2014), can affect the investment decisions as well as consumption actions, and may ultimately influence the inflation expectations. Thus, the role of economic policy uncertainty in driving inflation expectations is an important issue deserving attention.

A large volume of research has investigated and explained the formation of inflation expectations from various perspectives at macro and micro levels. With regards to the macro-economic determinants[1], previous literature mainly focused on the factors including past inflation, economic outputs, money supply, etc (Carlson and Parkin, 1975; Fukuda et al., 1991; Mullineaux, 1980; Pearce, 1985; Pearce, 1987). As the inflation targeting was adopted by more and more central banks of both developed and developing countries since the 1990s, a considerable volume of work has emerged examining the relationship between inflation targeting and inflation expectations. The empirical results of many studies have indicated that inflation targeting is one of the factors influencing expectations (Cerisola and Gelos, 2009; Gürkaynak et al., 2010; Szyszko and Płuciennik, 2018), highlighting the important role of monetary policy in shaping inflation expectations. More recently, Hachula and Nautz (2018), Lei et al. (2015) found that the macroeconomic news is a non-negligible factor influencing inflation expectations. In this regard, economic policy especially economic policy uncertainty (including monetary policy uncertainty) may have a substantial effect on inflation expectations.

However, there are few studies focusing on investigating the relationship between economic policy uncertainty and inflation expectations. Since the seminal work of Baker et al. (2016) who developed the economic policy uncertainty index of major countries, a growing number of studies have evaluated the effects of policy-related uncertainty on macroeconomic performances (Caggiano et al., 2017; Chen et al., 2019; Fontaine et al., 2017; Li and Zhong, 2019; Stockhammar and Österholm, 2016) .Whereas, to the best of our knowledge, there are only two papers in the literature that assessed the impact of economic policy uncertainty shocks on inflation expectations. Applying panel- Bayes vector autoregressions (BVAR) model, Istrefi and Piloiu (2014) demonstrated that both long- and short-term inflation expectations are sensitive to economic policy uncertainty shocks in the US and the euro area. Using a time series data from 2006 Quarter 3 to 2016 Quarter 3, Ghosh et al. (2017) also found that policy-related uncertainty has considerable effects on households' inflation expectations in India.

Nevertheless, these two studies just examine the impact of domestic uncertainty shocks. In the context of economic globalization, some empirical results reveal that both domestic and external factors may be the inflation drivers of one country. Globan et al. (2016) investigated the domestic and external inflation determinants for eight non-eurozone new EU member states from 2001M05 to 2013M06, and found that foreign shocks (i.e., eurozone output gap; crude oil spot price; eurozone three-month money market interest rate) are a primary factor in explaining inflation dynamics of these countries in the medium run. Additionally, a strand of literature has verified that there exist policy uncertainty spillovers from developed countries to developing nations. The empirical results of Gauvin

[1] In this paper, we just take account of the macro-economic factors which affect inflation expectations.

et al. (2014) indicated that increases in US and EU policy uncertainty could reduce and increase capital flows to emerging market economies, respectively. By estimating a global vector autoregressive (GVAR) model, Han et al. (2016) found that the international transmissions of policy uncertainty have significant impact on China's macroeconomic conditions (e.g., output, trade, financial markets). In this sense, the spillover effect of foreign uncertainty shocks on inflation expectations in China should also be taken into account. In addition, in the estimation of BVAR model of these two studies, all monthly series (e.g., economic policy uncertainty) are converted to quarterly observations. Their analysis of the joint process sampled at quarterly frequency may have potential consequences such as specification errors of impulse response functions, etc (Ferrara and Guérin, 2018; Ghysels, 2016).

This paper contributes to the literature along several dimensions. First, to the best of our knowledge, we are the first to look at the impact of policy-related uncertainty shocks on China's inflation expectations, which presents a novel perspective to better understand the formation of inflation expectations in the context of the Chinese economy. Second, our study compares the heterogeneous effect of domestic and foreign economic policy uncertainty shocks on inflation expectations in China. Third, this paper employs the recently developed mixed frequency VAR (MF-VAR) approach to deal with the mismatch of monthly observations and quarterly observations, which can measure the impact of uncertainty shocks more effectively.

This article is conceptualized as follows. The next section, we present the data and methodology. The empirical analysis is offered in Section 3. Section 4 provides concluding remarks.

2. Data and methodology

2.1. Model

The VAR framework is always employed to evaluate the effect of macroeconomic shocks (Caggiano et al., 2014; Ferrario et al., 2018; Kang et al., 2017). A great number of studies have mainly applied impulse response and variance decomposition analysis in VAR framework to investigate the impact of economic policy uncertainty on macroeconomic performances (Caggiano et al., 2017; Fontaine et al., 2017; Stockhammar and Österholm, 2016), the driven factors of inflation and inflation expectations (Cerisola and Gelos, 2009; Globan et al., 2016; Hachula and Nautz, 2018), as well as the influence of economic policy uncertainty shocks on inflation expectations (Ghosh et al., 2017; Istrefi and Piloiu, 2014).

In macroeconomic applications, vector autoregressions are typically estimated either exclusively based on quarterly observations or monthly observations. In order to capture the impact of economic policy uncertainty on inflation expectations in China effectively by exploiting the mixed frequency data, mixed-frequency method adopted in this study is a state space-based model which follows the work by Ankargren et al. (2018), Schorfheide and Song (2015). Consistent with the study of Ghosh et al. (2017), we assume that the VAR model has five endogenous variables, inflation expectations, inflation, short-term rate, output gaps, and China's economic policy uncertainty, given by the vector $\left(IFE_{q,t}, INF_{m,t}, STR_{m,t}, GAP_{q,t}, Cepu_{m,t}\right)$. The economic policy uncertainties in Europe ($Eepu_{m,t}$), the US ($Uepu_{m,t}$), Japan ($Jepu_{m,t}$) and the BRICS ($Bepu_{m,t}$) economy, are exogenous variables. We select the lag of VAR model using the Schwarz Criterion. The vector of endogenous variables and exogenous variables x_t can be composed into $x_t = \left[x'_{m,t}, x'_{q,t}\right]'$, where the $n_m \times 1$

vector $x_{m,t}$ collects variables that are observed at monthly frequency, and the $n_q \times 1$ vector $x_{q,t}$ comprises the unobserved monthly output gaps and inflation expectations that are only published quarterly. To cope with the missing observations, the MF-VAR is represented as a state-space model. Define $z_t = \left[x_t', \cdots, x_{t-p+1}'\right]'$ and $\Phi_t = \left[\Phi_1, \cdots, \Phi_p, \Phi_c\right]'$. The VAR model is employed such that

$$z_t = F_1(\Phi) z_{t-1} + F_c(\Phi) + \upsilon_t \qquad \upsilon_t \sim \text{iid}N\left(0, \Omega(\Sigma)\right) \tag{1}$$

where the first n rows of $F_1(\Phi)$, $F_c(\Phi)$, and υ_t are defined to reproduce VAR process and the remaining rows are defined to deliver the identities $x_{q,t-l} = x_{q,t-l}$ for $l = 1, \cdots, p-1$. The $n \times n$ upper-left submatrix of Ω equals Σ and all other elements are zero. Equation (1) is the state-transition equation of the MF-VAR.

Following the setting of state-space representation of the MF-VAR by Schorfheide and Song (2015), the measurement equation is given by

$$y_{m,t} = x_{m,t}, \qquad t = 1, \cdots, T_b \tag{2}$$

$$\tilde{y}_{q,t} = \frac{1}{3}\left(x_{q,t} + x_{q,t-1} + x_{q,t-2}\right) = \Lambda_{qz} z_t \tag{3}$$

$$y_{q,t} = M_{q,t}\, \tilde{y}_{q,t} = M_{q,t} \Lambda_{qz} z_t, \qquad t = 1, \cdots, T_b \tag{4}$$

$$y_{m,t} = M_{m,t} x_{m,t}, \qquad t = T_b + 1, \cdots, T \tag{5}$$

$$y_t = M_t \Lambda_z z_t, \qquad t = 1, \cdots, T \tag{6}$$

where T denotes the forecast origin, T_b $(T_b \leq T)$ represents the last period that corresponds to the last month of the quarter and all quarterly observations are available in this period. The subscript b stands for balanced sample.

Specifically, Equation (2) indicates that the actual observations $y_{m,t}$ can be denoted by the observed vector of monthly series $x_{m,t}$. Equation (3) indicates the three-month average of $x_{q,t}$. In periods when quarterly averages are observed, the dimension of the vector $y_{q,t}$ is n_q, and zero otherwise. Thus, we can get Equation (4). $y_{m,t}$ denotes the subset of monthly variables. In this subset, period t observations are reported by the statistical agency after period T. $M_{m,t}$ is a deterministic sequence of selection matrices. In this case, Equation (2) can be extended to Equation (5). Then, we can get Equation (6) based on the measurement Equation (2) to (5). M_t is a sequence of selection matrices, selecting the time t variables that have been observed by period T.

In sum, the state-space representation of the MF-VAR is given by Equation (1) and (6). We do not discuss the Bayesian approaches to estimate MF-VAR models further here, but instead refer the reader to the surveys by Ghysels (2016), Schorfheide and Song (2015).

2.2. Data

Following the majority of the recent literature, this paper selects five endogenous variables and four exogenous variables for VAR model. The five endogenous variables are inflation expectations, inflation, short-term rate, output gaps, and China's economic policy uncertainty, respectively. The exogenous variables are four economic policy uncertainty indexes in Europe, the US, Japan and the BRICS economy[2], respectively. It is important to note that inflation expectations are estimated by the authors based on Ang et al. (2007), using the data from the Urban Depositor Questionnaire Report of the Statistics and Analysis Department of the People's Bank of China[3]. Inflation rate is calculated as the monthly percentage change in consumer prices index (CPI), which is also the headline inflation rate. The short-term rate is denoted by one-month interbank lending rate. The output gaps are calculated by HP filtering through the GDP data. The variables enter the VAR model in logarithmic difference levels with the exception of short-term rate (divided by 100), inflation expectations and output gaps[4]. Inflation expectations and output gaps are quarterly data, others are monthly data. The data coverage is from January 2001 to December 2018, since China's Urban Depositor Questionnaire Report have only been published after 2001. China's macroeconomic data are obtained through the National Bureau of Statistics of China and the economic policy uncertainty index provided by Baker et al. (2016) can be obtained directly at its companion website[5].

The statistical information such as maximum and minimum values of inflation expectations, inflation, short-term rate, output gaps, and five economic policy uncertainties are presented in Table 1. The mean of inflation expectations is positive during our sample period, reflecting generally expectations that prices will rise in the next quarter. In practice, the mean of inflation is 0.023, which is in line with people's expectations. The mean of short-term rate implies the instruments of China's monetary policy and the mean of output gaps implies the level of economic activity. China and the Europe region present high average values of economic policy uncertainty with 171.818 and 152.691 respectively. It indicates a high degree of economic instability. China also experienced maximum standard deviation, attesting increasing volatility of economic policy uncertainty. All variables are positively skewed. Furthermore, inflation expectations and output gaps show negative excess kurtosis and approximately normal distribution. Others are shown to be leptokurtic, indicating that they have fat tails and strongly reject the normality.

[2] Referring to the database of World Bank, the population and GDP figures of the top 4 economies (or economic regions) in the world according to 2001–2017 nominal GDP figures are the European Union (25.916% of the world's economy), the US (24.457%), China (9.822%), and Japan (8.129%). They represent 68.324% of the global economy. The economies of the BRICS countries have grown at a rapid pace and are becoming increasingly more integrated with the most developed economies in terms of trade and investment. They account for more than 40% of the world's population and more than 20% of world's economy. In this paper, the economic policy uncertainty in the BRICS actually only includes the economic policy uncertainty in Brazil, Russia and India. Because the economic policy uncertainty in China is selected as endogenous variable and the economic policy uncertainty in the South Africa is unavailable. What's more, we impute missing values for India using a regression-based method based on Davis (2016).

[3] Website address: http://www.pbc.gov.cn/diaochatongjisi/116219/116227/index.html

[4] The reasons of this pretreatment are referred to Schorfheide & Song (2015), specifically.

[5] Website address: http://www.policyuncertainty.com/

Table 1. Descriptive statistics.

	Mean	Max.	Min.	Std. D.	Skew.	Kurt.	J-B	Obs
IFE	0.076	0.299	−0.080	0.089	0.484	2.755	2.987	72
INF	0.023	0.087	−0.018	0.020	0.708	3.742	23.015***	216
STR	2.403	6.580	0.840	0.743	1.038	7.293	204.603***	216
GAP	−0.001	0.053	−0.040	0.021	0.524	2.792	3.426	72
Cepu	171.818	935.310	26.144	138.530	2.194	9.076	505.481***	216
Eepu	152.691	433.278	47.692	66.222	1.055	5.060	78.292***	216
Jepu	105.607	236.850	48.431	32.384	1.134	5.145	87.712***	216
Uepu	123.856	283.666	44.783	46.269	0.888	3.646	32.160***	216
Bepu	127.645	344.682	46.236	52.349	1.056	4.046	49.947***	216

Note: IFE, INF, STR, GAP are inflation expectations, inflation, short-term rate, output gaps, and China's economic policy uncertainty, respectively; Cepu, Eepu, Jepu, Uepu, Bepu denote economic policy uncertainty indexes in Europe, the US, Japan and the BRICS, respectively.

3. Empirical analysis

3.1. Full sample results

Figure 1 depicts the impulse responses functions of all endogenous and exogenous variables to shocks in inflation expectations up to 60 months, from the estimation of MF-VAR approach during the period 2001 to 2018. Impulse response functions are generally in line with what we would expect based on the macroeconomic theory. It can be seen that a one standard deviation shock to both inflation rate and output gaps increase the inflation expectations in China. On the contrary, the response of inflation expectations to short-term rate shocks turns out to be negative.

There exists heterogeneous effect of national economic policy uncertainty shocks on Chinese inflation expectations. Specifically, the reaction of inflation expectations in China to its own policy-related uncertainty shocks is positive, which is similar to the findings of Ghosh et al. (2017). This response peaks around the 2nd month (about 0.006%) and dies out quickly in one year. One percent shock to the European uncertainty also increases the Chinese inflation expectations. The maximum effect can be found after 4 months where the inflation expectations is improved by 0.036%. By contrast, the positive response to Japanese economic policy uncertainty shocks indicates relatively less persistent on the inflation expectations in China. The effect of Japanese uncertainty shocks is negative for the first quarter, subsequently becomes positive. It is noteworthy that the response of inflation expectations to the policy uncertainty shocks of both the US and BRICS remains on the negative side. We will try to investigate the reason in the following context.

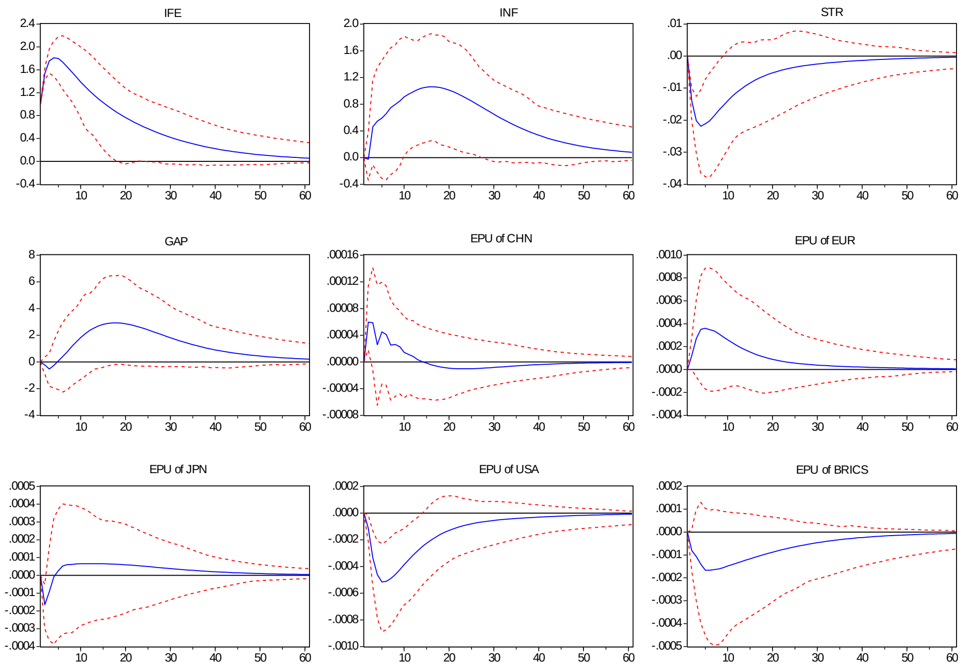

Figure 1. Impulse response of inflation expectations to different shocks (Full-sample).

Table 2 reports the forecast error variance decompositions that can be used to further assess the importance of national economic policy uncertainty shocks to the variance of inflation expectations. The influence of national economic policy uncertainty shocks especially that of China's domestic policy-related uncertainty on the inflation expectations are substantial. We observe that just 5.227 percent of the variation of inflation expectations can be explained by national economic policy uncertainty (both domestic and foreign uncertainty) in month 1, it raises steadily to 9.799% in month 6, 10.182% in month 12 and 10.471% in month 24. In addition, national economic policy uncertainty turns out to be the most important factor for the inflation expectations' forecast error variance decomposition expect inflation expectations itself. However, the contribution of external uncertainty shocks seems to be negligible compared to that of China's domestic uncertainty shocks. Chinese uncertainty shocks account for on average 8.928% of the variation of China's inflation expectations along all forecast horizon. By contrast, the uncertainty shocks of the US, Europe, Japan and the BRICS just contribute 0.501%, 0.031%, 0.133% and 0.340%, respectively.

Table 2. Variance decomposition in full sample (%).

Horizon	IFE	INF	STR	GAP	Cepu	Eepu	Jepu	Uepu	Bepu
1	89.898	0.155	0.343	4.377	3.963	0.002	0.000	1.044	0.219
3	79.320	0.350	5.000	5.355	9.390	0.016	0.003	0.514	0.051
6	78.444	0.896	6.549	4.312	9.268	0.013	0.004	0.449	0.065
9	78.674	1.698	6.461	3.183	9.349	0.010	0.030	0.454	0.142
12	78.258	2.749	6.091	2.720	9.346	0.017	0.088	0.465	0.267
18	75.771	4.987	5.352	3.483	9.093	0.049	0.239	0.478	0.548
24	73.377	6.600	4.888	4.664	8.810	0.076	0.353	0.481	0.750

Note: It is the same as that of Table 1.

3.2. Comparation between pre-crisis and post-crisis periods

Considering that both national economic policy uncertainty and China's inflation situation have experienced remarkable changes since the 2008 global economic crisis, it's necessary to make a comparison of the impact of national uncertainty shocks on China's inflation expectations between pre-crisis period (from 2001 to 2007) and post-crisis period (from 2008 to 2018). Impulse response functions in these two subsamples are presented in Figure 2 and Figure 3, respectively.

The influence of national economic policy uncertainty shocks on the inflation expectations in China varies remarkedly over time. Overall, during the pre-crisis period, responses to national policy uncertainty shocks (e.g., uncertainty shocks of China, Japan and the BRICS) reveal more uncertainty about the sign as well as the magnitude of these shocks' effect on the inflation expectations. This may be explained by the fact that the orientation of macroeconomic policy in the world has changed more frequently during the pre-crisis period, which differs from the relatively stable expansionary policy (e.g., easy monetary policy) after 2008 global economic crisis. Specifically, inflation expectations in China rise in response to the uncertainty shocks made by Europe in both pre-crisis and post-crisis periods, suggesting that there always exists a positive spillover effect of European uncertainty shocks on China's inflation expectations. The sign of the impact of uncertainty shocks made by Japan, China and the BRICS on China's inflation expectations all varies during the pre-crisis period. In the post-crisis period, the reaction of inflation expectations to Japanese and China's own uncertainty shocks remains on the positive side, which is closely associated with the easy monetary policies introduced by these two countries since 2008 global economic crisis. Turning to the shocks of the BRICS uncertainty, it can be seen that the impact is negative during the period 2008 to 2018. Due to the high inflation rates as well as currency devaluation pressures in Brazil, Russia and India during the post-crisis period, the uncertainty shocks made by the BRICS will be expected to decline the inflation expectations in China. It is worth mentioning that Chinese inflation expectations decrease in response to the US uncertainty shocks in both pre-crisis and post-crisis periods. However, we believe the reasons about the negative impact of US uncertainty shocks may be different in the two subsamples. During the pre-crisis sample, the US Federal Reserve System mainly reduces and improves the federal fund rate in the period January 2001 to July 2003 and June 2004 to June 2006, respectively. Considering the linkage between Chinese and the global economy became much closer after China's entry into WTO in the late 2001, the orientation of tight monetary policy in the US should affect more of China's inflation expectations in the pre-crisis period. As a result, the spillover effect of US uncertainty shocks on the China's inflation expectations is negative in general. The US government has mainly implemented the easy monetary policy during the post-crisis period (from 2008 to the late 2015). However, in the context of reindustrialization and manufacturing renaissance strategy introduced by US government in 2010, the outflow of US funds from China is expected to be an upward tendency, which will improve the RMB appreciation expectations and decline the inflation expectations in China. This may be an important reason why US uncertainty shocks have negative effect on China's inflation expectations after 2008 global economic crisis.

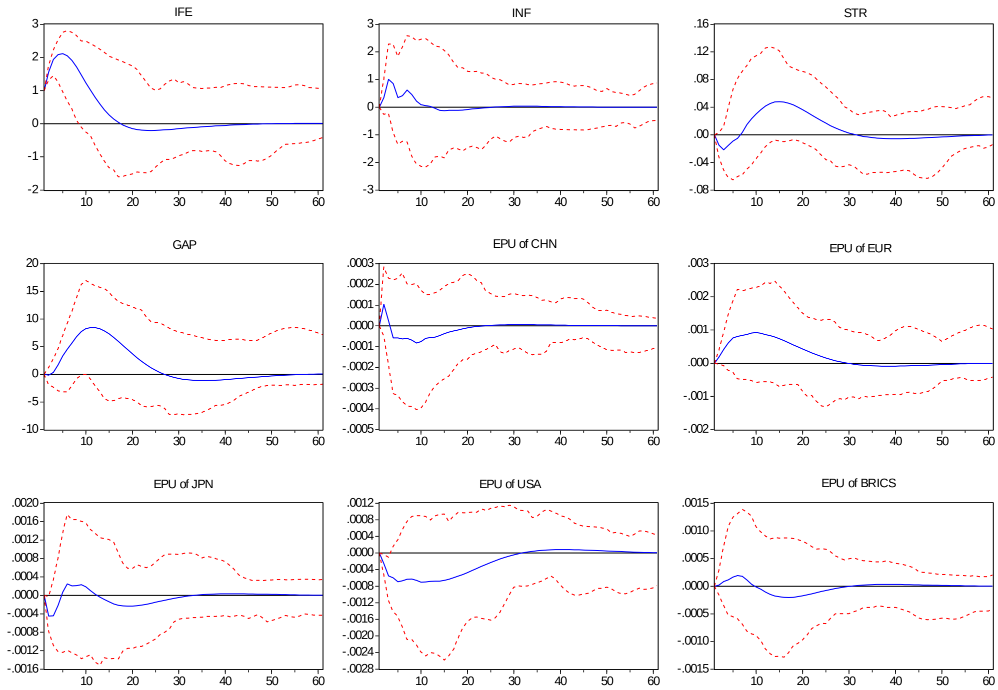

Figure 2. Impulse response of inflation expectations to different shocks (Pre-crisis period).

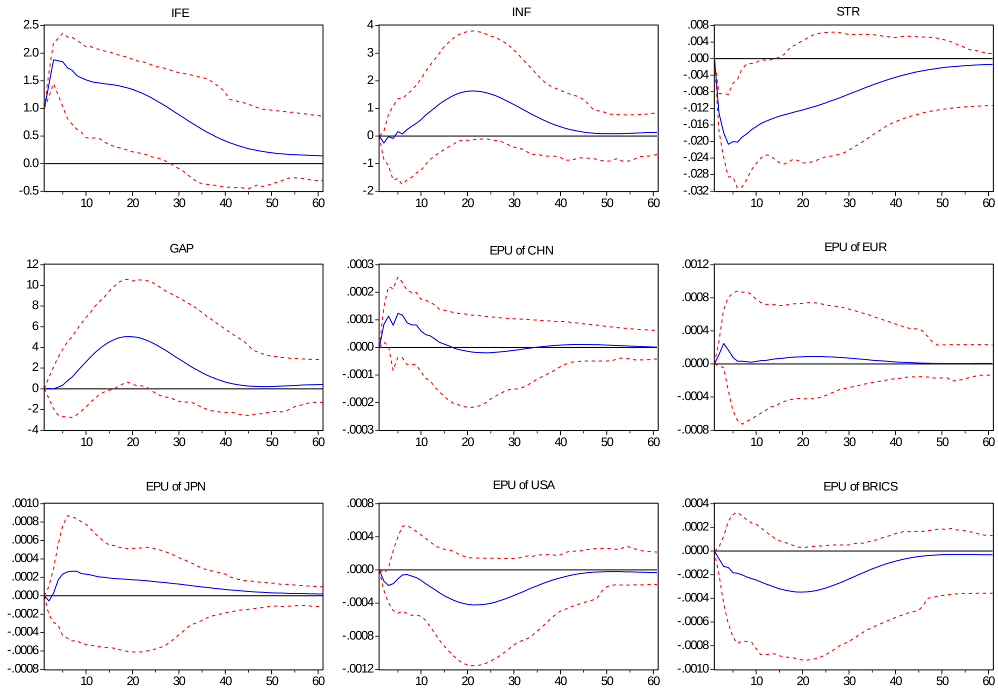

Figure 3. Impulse response of inflation expectations to different shocks (Post-crisis period).

The forecast error variance decompositions in the pre-crisis and post-crisis periods are shown in Table 3 and Table 4, respectively. Clearly, the contribution of national economic policy uncertainty shocks to China's inflation expectations volatility in post-crisis period is significantly larger than that during pre-crisis period. On average, the contribution made by national uncertainty shocks is just 2.273% along all forecast horizon in the pre-crisis period, which is smaller than that of output gaps (6.762%) and inflation (3.871%). However, during the post-crisis period, the contribution of uncertainty shocks reaches 19.574%, nearly 9 times as large as that in the pre-crisis period. Meanwhile, uncertainty shocks contribute markedly more than that of any other endogenous variables except inflation expectations' own shocks, implying that policy-related uncertainty shocks have become a dominant driving force of China's inflation expectations after 2008 global economic crisis. Additionally, both domestic and foreign economic policy uncertainty shocks play more important roles in explaining the forecast error variance of China's inflation expectations. China's domestic uncertainty shocks only explain on average 2.081% of the variation of inflation expectations along all forecast horizon before 2008 global economic crisis, whereas it can account for 17.592% during the post-crisis period. The total contribution of external uncertainty shocks has also improved from 0.192% to 1.982%. Specifically, the uncertainty shocks of the US, Europe, Japan and the BRICS contribute 0.049%, 0.064%, 0.071% and 0.007% in the pre-crisis period, respectively. By contrast, during the post-crisis period, these proportions have enhanced to 0.374%, 0.365%, 1.234% and 0.008%, respectively. However, it should be noted that the contribution of external uncertainty shocks is still relatively limited, in comparison with that of China's domestic uncertainty shocks.

Table 3. Variance decomposition in the pre-crisis period (%).

Horizon	IFE	INF	STR	GAP	Cepu	Eepu	Jepu	Uepu	Bepu
1	94.956	0.361	4.245	0.009	0.086	0.169	0.165	0.002	0.009
3	93.750	2.099	1.818	0.533	1.496	0.121	0.150	0.029	0.003
6	91.544	3.023	0.974	2.127	2.102	0.073	0.101	0.051	0.005
9	88.809	3.651	0.829	4.247	2.289	0.046	0.064	0.058	0.006
12	85.871	4.146	0.979	6.517	2.339	0.036	0.045	0.059	0.008
18	80.440	4.867	1.614	10.644	2.286	0.046	0.039	0.055	0.009
24	76.354	5.324	2.251	13.700	2.196	0.066	0.048	0.051	0.010

Note: It is the same as that of Table 1.

Table 4. Variance decomposition in the post-crisis period (%).

Horizon	IFE	INF	STR	GAP	Cepu	Eepu	Jepu	Uepu	Bepu
1	83.616	0.000	0.415	7.731	7.175	0.430	0.433	0.196	0.004
3	67.293	0.335	7.149	6.191	17.832	0.351	0.777	0.067	0.006
6	64.394	0.195	10.001	5.037	19.073	0.336	0.923	0.031	0.010
9	64.321	0.193	10.734	3.765	19.509	0.346	1.064	0.056	0.010
12	64.508	0.569	10.799	3.070	19.272	0.361	1.230	0.182	0.009
18	63.409	2.651	10.110	3.627	17.629	0.376	1.543	0.646	0.008
24	61.821	4.901	9.468	4.594	16.070	0.374	1.737	1.026	0.008

Note: It is the same as that of Table 1.

4. Conclusion

In this study, we apply the MF-VAR model to investigate the impact of economic policy uncertainty shocks on the inflation expectations in China. The main findings can be concluded that (1) China's inflation expectations are sensitive to policy-related uncertainty shocks. (2) There exists heterogeneous impact of national economic policy uncertainty shocks on inflation expectations in China. Overall, China's inflation expectations rise in response to the uncertainty shocks made by Europe, Japan and China itself. However, the reaction of inflation expectations in China to both the US and the BRICS uncertainty shocks is negative. (3) The policy-related uncertainty shocks are the major source of inflation expectations volatility in China. In addition, the contribution of China's domestic uncertainty shocks is much higher than that of foreign uncertainty shocks. (4) The influence of national economic policy uncertainty shocks on the China's inflation expectations differs remarkedly between the pre-crisis and post-crisis periods. (5) Both domestic and foreign policy-related uncertainty shocks affect much more of the China's inflation expectations during the post-crisis period. Additionally, the uncertainty shocks especially China's domestic uncertainty shock have become a dominant driving force of China's inflation expectations after 2008 global economic crisis.

Our study also has important implications for policy makers when they strive to manage inflation expectations. Considering that economic policy uncertainty shocks have remarkable impacts on the inflation expectations in China, policy makers need to be more concerned with the influence of notable political events and development all over the world. In addition, given that China's own uncertainty shocks play more important role in the formation of inflation expectations in China, the policy-related uncertainty shocks of China itself should be paid greater attentions by the policy makers in this country accordingly.

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Conflict of interest

The authors declare no conflict of interest.

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