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Abstract

This paper explores the price rigidity in China using 259 monthly domestic and foreign macroeconomic time series. A factor-augmented vector autoregressive (FAVAR) model expanded with global components is employed. Four findings are obtained. First, the model shows that disaggregated price indices are volatile but not necessarily stickier than aggregate price series, and the inflation triggered by global and domestic components is massive and persistent. Second, although the global components have minimal effects on price volatility, they have a growing contribution to volatility. Moreover, they are a major force of the price persistence in China. Third, no clear evidence shows that the price stickiness in China is subject to urban-rural disparities. Last, we observe a relatively active price volatility and high persistence after the 2008 financial crisis, in which domestic components have increasingly significant impacts.

Keywords: FAVAR, global components, price rigidity

JEL classification: E31, E32, E52

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1 Introduction

The outward-looking economic development path of China over the last 40 years has led it to build close trading relationships with other economies worldwide. The National Bureau of Statistics of China indicated that the gross value of imports and exports has increased fivefold over the past 15 years and accounts for 48.9% of the GDP of China on average. Foreign assets and liabilities increased from 15.5% in 2000 to 37.2% in 2015 as a proportion of GDP. In the wake of the continued integration of China into the global economy, the impact of globalization on the macroeconomic variables of China merits attention.

Numerous studies have shown that domestic economic performance is closely linked to global economic conditions. Using Vector Autoregressive (VAR) model, Zhang, Song and Wang [2015] showed that the global output gap measured by GDP significantly affected the inflation in China, which is closely related to changes in GDP. Chen et al. [2016] demonstrated that the quantitative easing policy led to the economic overheating of China in 2010 and 2011. Boivin and Giannoni [2008] showed that globalization had a relatively modest impact on the macroeconomic performance of the United States in recent decades and suggested that global macroeconomic factors affected the domestic economy via the monetary transmission mechanism of the recent decades. Mumtaz and Surico [2009] illustrated that the global interest rate and supply shocks in the United Kingdom significantly impacted inflation and output growth. Chen and Tsang [2016] indicated that external shocks noticeably influenced the economy of Hong Kong through trade and the capital market. Karagedikli and Thorsrud [2010] showed that global economic shocks, particularly inflation shocks, had significant effects on the economy of New Zealand. Kamber et al. [2013] suggested that the Japanese, Australian, and Canadian economies were particularly vulnerable and should consider the importance of external economic environment in formulating policies.

Among macroeconomic factors, prices are of particular interest because price rigidity is a major element of New Keynesian macroeconomic models. The assumption of nominal

rigidity allows the monetary transmission mechanism to function, which makes monetary policy effective in the short run (Calvo [1983], Yun [1996], and Kehoe and Midrigan [2015]). Maćkowiak, Moench and Wiederholt [2009] attributed price stickiness to adjustment costs and informational frictions. Adjustment costs were illustrated in detail by the traditional Calvo model and the menu cost model (Midrigan [2011] and Nakamura and Steinsson [2008]); informational frictions could be explained by the sticky-information model (Mankiw and Reis [2006], and Mankiw and Reis [2007]) and the rational-inattention model (Maćkowiak and Wiederholt [2009], and Woodford [2009]). The literature suggested that costs or constraints were the causes of price stickiness. The magnitude and persistence of sticky-price effects had profound impacts on monetary policy formulation.

Moreover, recent studies found that disaggregated data were more volatile and changed more frequently than aggregated data. Bils and Klenow [2004], Clark [2006], and Klenow and Kryvtsov [2008] illustrated this finding with U.S. data, Abe and Tonogi [2010] with Japanese data, and Dhyne and Konieczny [2014] with Belgian data. Therefore, when investigating price rigidity, aggregated and disaggregated data should be included and emphasized.

However, most studies that focused on the price rigidity in China did not study a wide range of domestic economic indicators and the global economic environment at the same time. Also, the situation of the price rigidity across different types of price indices at the aggregated and disaggregated levels remains to be studied; in particular few research so far has analyzed the price changes before and after the 2008 financial crisis. This paper hence contributes to filling the gaps.

To conduct an in-depth study on the price stickiness in China, we use the factor-augmented VAR (FAVAR) model with global factors proposed by Boivin and Giannoni [2008] and Mumtaz and Surico [2009], which accommodates significantly more explanatory variables than traditional VAR models.

Based on this FAVAR model with a global sector and 259 domestic and foreign monthly series data, our analysis of the price rigidity in China centers on the following

questions: (1) What is the price rigidity in China at both aggregated and disaggregated levels? (2) What are the main sources of the price changes in China, and how do prices respond to different shocks? (3) Are there any differences in prices between the urban and rural areas in China? (4) How significant is the role of global factors in the price rigidity in China, and has this significance changed before and after the 2008 financial crisis?

After analyzing the empirical results obtained from the model, we obtain four main findings. First, disaggregated price indices are more volatile, but not necessarily stickier, than aggregated series. The inflation driven by latent global and domestic components is large and enduring. Second, the effects of global components on price volatility are insignificant, but are becoming increasingly visible. Global components are also a major factor driving price persistence. Third, price series have become more volatile and persistent after the 2008 financial crisis, and the impact of domestic components on price volatility has grown remarkably. Lastly, there is no clear evidence indicating the existence of an urban-rural price difference.

The rest of the paper is organized as follows. In Section 2, we present the FAVAR model, which we use to extract representative common components that contribute to China's price rigidity. Section 3 reports the empirical results of price rigidity in terms of volatility and persistence, as well as its responses to different types of shocks. A comparison between urban and rural areas before and after the 2008 financial crisis is also presented. Finally, Section 4 concludes the paper.

2 Methodology and Data

Our work utilizes the FAVAR model proposed by Bernanke, Boivin and Eliasz [2005]. We extend the model by adding a global sector. In the model, shocks are decomposed into three parts, namely, global, domestic, and sector-specific. In this section, we first introduce the theoretical model before describing our data and the final model specification.

2.1 Model

Using a large macroeconomic data set, Bernanke, Boivin and Eliasz [2005] built the FAVAR model to trace the effects of domestic, sectoral, and monetary policy shocks on a closed economy. Following Boivin and Giannoni [2008] and Mumtaz and Surico [2009], we introduce global factors into the FAVAR model to measure the effects of global economic shocks on the domestic economy. We assume that two regions exist, namely, the domestic region and the rest of the world, the latter is indicated by a tilde above the letter. In line with the specification by Boivin and Giannoni [2008], Y_t is a $N \times 1$ vector of observable domestic macroeconomic indicators, and $\tilde{Y}_t$ denotes a $M \times 1$ vector of observable global indicators. These indices are assumed to be linked to unobserved common components which, according to Bernanke, Boivin and Eliasz [2005], fundamentally shape economies. X_t denotes a vector that potentially relates to domestic unobserved factors, while $\tilde{X}_t$ refers to a vector linked to global underlying factors. The abovementioned variables are assumed to be related through Equation 1:

$$\begin{aligned} Y_t &= \Lambda X_t + e_t \\ \tilde{Y}_t &= \tilde{\Lambda}\tilde{X}_t + \tilde{e}_t \end{aligned} \tag{1}$$

where Λ and $\tilde{\Lambda}$ are $N \times (J+1)$ and $M \times K$ matrices of factor loading, respectively. The $N \times 1$ and $M \times 1$ vectors of series-specific errors, e_t and $\tilde{e}_t$, are uncorrelated with common components but can be serially correlated and weakly correlated across macroeconomic variables.

$$X_t = \begin{bmatrix} F_t \\ V_t \end{bmatrix} \tag{2}$$

X_t and $\tilde{X}_t$ are related to the $(J+1) \times 1$ and $K \times 1$ matrices of latent factors estimated by the principal component analysis (PCA). V_t captures the effects of domestic monetary policy innovations and it is believed to have joint effects with unobserved variables F_t,

as shown in Equation 2. The numbers of domestic and global common factors, $J+1$ and K, are relatively small compared with the numbers of macroeconomic fundamental series, N and M.

$$\begin{bmatrix} \tilde{X}_t \\ X_t \end{bmatrix} = \Phi(L) \begin{bmatrix} \tilde{X}_{t-1} \\ X_{t-1} \end{bmatrix} + \begin{bmatrix} \tilde{u}_t \\ u_t \end{bmatrix} \tag{3}$$

The reduced VAR model in Equation 3 indicates the transition dynamics, where $\Phi(L)$ is a conformable matrix with p-step lags. Structural factors, $\tilde{u}_t$ and u_t, are $i.i.d.$ with zero mean, as well as constant finite variance, and they can be cross-correlated.

Equations 1, 2, and 3 constitute the extended FAVAR model to accommodate global factors. We obtain latent factors before constructing the structural VAR model to build the extended FAVAR model.

For the common global components, the first K principal factors are identified by using a standard PCA from the data set of global macroeconomic fundamental indicators.

For the common domestic components, we conduct the two-step PCA proposed by Boivin, Giannoni and Mihov [2009]. The first step is to detect the underlying construct using a standard PCA. In the second step, the monetary policy instrument is added to further estimate the VAR in Equation 3. Of note is that the information of monetary policy instrument V_t has been captured during the first-step estimation because it is assumed to be a true common component. However, given that V_t is added to the common factors in the second stage, it should be uncorrelated contemporaneously with other domestic common components in the first step. To address the possible effects of the monetary policy instrument on other common factors, we (1) obtain the first J principal components of Y_t from $F_t^{(0)}$, an initial estimate of F_t; (2) acquire $\hat{\lambda}_V^{(0)}$ by regressing Y_t on $F_t^{(0)}$ and V_t; (3) compute $\hat{Y}_t^{(0)} = Y_t - \hat{\lambda}_V^{(0)} V_t$; (4) estimate $F_t^{(1)}$ as the first J principal components of $\hat{Y}_t^{(0)}$; and (5) repeat steps (2) to (4) multiple times.

Having extracted the global and domestic common components $\tilde{X}_t$ and X_t and obtained the factor loadings $\tilde{\Lambda}$ and Λ, we can estimate the transition equation, Equation 3.

2.2 Data

The data set used in this paper includes a panel of 259 monthly macroeconomic series from January 2001 to June 2016. Appendix A presents a detailed description of data. The variables are primarily obtained from the CEIC database, and others are retrieved from the Wind, Federal Reserve Economic Data, and OECD databases.

As a balanced panel, the data set contains three parts. First, global economic fundamentals are presented by 49 macroeconomic indicators from foreign economies. Similar to Boivin and Giannoni [2008], we include data sets on industrial production, price, and short- and long-term interest rates from seven major economies, which constitute some of the major trading partners of China. We also expand the data set by adding indicators covering unemployment rates, policy rates, and money supplies, as well as the stock market indices of these seven economies.

The second part consists of a large data set from China. Having been found collectively effective in measuring the state of the economy by Bernanke, Boivin and Eliasz [2005] and Boivin, Giannoni and Mihov [2009], the Chinese data set contains key indicators on industrial production, inflation, construction, public finance, investment, interest rates, exchange rates, and financial markets. Considering that Boivin, Giannoni and Mihov [2009] found that disaggregated price series helped estimate monetary shocks, we also incorporate 103 disaggregated price series in China, which include the consumer price index (CPI), producer price index (PPI), and retail price index (RPI). Disaggregated industrial production includes missing values. Data are unavailable for each January and February after 2013 due to the concern of the effect of the Chinese New Year. Under the assumption that disaggregated elements grow by the same percentage as the aggregated industrial production does, we replace the missing data with the product of the value of last year and the growth rate of aggregated industrial production to preserve data integrity for our analysis.

The CPI in each country is also adjusted by taking the value of the corresponding period in the previous year as 100%. Given the data set, the series are seasonally adjusted

and transformed for stationarity. We rely on the methods of Bernanke, Boivin and Eliasz [2005], Boivin, Giannoni and Mihov [2009], and Boivin and Giannoni [2008] to adjust nonstationary data. The transformation details are listed in Appendix A.

2.3 Model Specification

Following Kaufmann and Lein [2013], we select the number of foreign and domestic latent factors. Two global and six domestic common factors are identified from the large panel data set based on the IC_{p1} proposed by Bai and Ng [2002]. Boivin, Giannoni and Mihov [2009] selected five domestic factors for the U.S., which is close to the six that we select. The utilization of less or more factors does not fundamentally change our results. A one-step lag is selected regardless of the change in the number of latent factors according to the Bayesian information criterion. Finally, our model includes two global and six domestic common factors with a one-step lag to reduce dimensionality (Boivin and Giannoni [2008]).

3 Empirical Results

We apply the extended FAVAR model with global components to analyze the price rigidity in China in this section which includes six main parts. First, we provide the details of the global and domestic common components that we identify. Second, the volatility and persistence of prices are studied at the aggregated and disaggregated levels, followed by an analysis of the sources of volatility and persistence. Third, the correlations between the volatilities of common and sector-specifc components and the correlations between price volatility and persistence are examined. Fourth, the price responses to shocks in terms of common components and monetary policy are presented. Apart from the three types of shocks, monetary shock, which is one of the domestic shocks, is studied as well. Fifth, we compare price volatility, persistence, and reaction to shocks in urban and rural areas. Lastly, we compare the price rigidity prior to and after the 2008 financial crisis.

3.1 Details on Components

Global and domestic common factors are extracted from the data set based on the model introduced in Section 2. We investigate the relationship between each series in the data set and the latent factors. Table 1 summarizes the top ten series in terms of R^2 across different factors. The R^2 statistic represents the percentage of inflation variance explained by the global components, the domestic components, or both. Global equity market indices are closely related to the two latent global components. Accordingly, the stock markets in these areas respond efficiently to global macroeconomic conditions. Apart from stock markets, the policy rates in Hong Kong, Taiwan, and the U.S. are strongly linked. Furthermore, the impacts of the latent global components on domestic variables are observed mainly in monetary indicators, such as the deposit, repurchase, and exchange rates. Compared with the R^2 of domestic variables on global components, the influence of domestic components on domestic variables is remarkably higher. The real estate investment of China, along with the stock market, is highly correlated with its seven domestic common components. Among all factors, the variables from the real estate, stock market, and price in China are most likely to be influenced by domestic and global common components.

Table 2 presents the R^2 of the selected series explained by different components. We find that price indices are more likely to be linked to the common factors in China than the production activities. Such findings are consistent with the findings of Boivin and Giannoni [2008]. The small R^2 value shows that exports and imports have insignificant ties to international components. Similarly, the small R^2 on all components suggests that adding global components to domestic components provides insignificant extra information. Similar cases are observed for FDI and floor space under construction, which are both more vulnerable to domestic economic shocks than foreign ones. In contrast, the R^2 of the savings deposits rate on global components is 14%, which is approximately 10% higher than that on domestic components. However, the one-year time deposit rate is closely linked to domestic common components and with minimal influence from global

components. Exchange rates present relatively high R^2 statistic on global components and relatively low figures on domestic components.

The economy of China as a whole is highly related to latent components. Specifically, 56% of the data from China can be explained by common factors. The domestic components account for most of the volatility, amounting to 55%. One percent of the fluctuations are attributed to the global components. The Chinese economy is much more affected by domestic factors in comparison with the findings of Boivin and Giannoni [2008] who reported that 45% (39%) of the volatility of the data from the U.S. was driven by (domestic) common components. Nevertheless, the low level of international factor influences the Chinese economy, as compared to the U.S. economy, which suggests that the pace of economic opening up in China has been slow.

3.2 Volatility and Price Persistence

In this section, we study the volatility and persistence of inflation on aggregated and disaggregated price data.

Following Boivin, Giannoni and Mihov [2009] and Boivin and Giannoni [2008], we decompose aggregated and disaggregated monthly price series and report the results in Table 3.

The volatility of aggregated PPI inflation is 0.90%. The fluctuation in producer goods is more volatile, reaching 1.18%. The variance in the consumer goods sector is below the average at 0.34%. Compared with PPI, aggregated CPI and RPI are less volatile, with standard deviations of approximately 0.65%. The R^2 suggests that over 85% of volatility at the aggregated level for PPI, CPI, and RPI series is linked to domestic macroeconomic factors. However, the low R^2 reaching to zero demonstrates that the volatility of aggregated prices is seldom attributed to global factors. As a result, Chinas inflation is driven domestically, rather than internationally.

In comparison, the volatility of inflation in disaggregated price series is different in terms of size and source. The volatility of all disaggregated price series is much higher

than that of aggregated price series, with an average of 1.58% and with observations ranging from 0.18% to 9.56%. Specifically, the disaggregated CPI series are the most volatile, with an average volatility of 2.72%. Disaggregated PPI and RPI series have volatilities of 1.46% and 0.91%, respectively. Within the PPI series, the petroleum and natural gas extraction sector exhibits the largest fluctuations, whereas the special purpose equipment sector experiences the least. Furthermore, the R^2 value indicates that the inflation volatility attributable to the influence of domestic common factors significantly decreases. Sector-specific components are another major source of variance, accounting for approximately 50% of the volatility of disaggregated prices. However, although with slight increase, global factors have little effects on disaggregated price indices.

The last three columns of Table 3 summarize the persistence of prices. Coefficients of autoregressive models are added to measure the degree of persistence. Aggregated PPI shows higher persistence (0.77) than disaggregated prices (0.29), including disaggregated PPI (0.35). However, the trends for CPI and RPI are different. Aggregated CPI and RPI are stickier than their corresponding disaggregated series. Monacelli and Sala [2009] similarly reported that aggregated CPI and RPI were less volatile and less persistent than their disaggregated counterparts in Germany, France, the U.K., and the U.S. The inflation in global and domestic common components is generally more persistent than the sector-specific inflation for both aggregated and disaggregated prices. As a result, the long-term inflation in China is more likely to be affected by common factors from economic fundamentals at home or abroad. Inflation in aggregated prices driven by domestic components exhibits the greatest persistence, whereas inflation in disaggregated prices driven by global components lasts longest. The sectoral components are shown to be less persistent.

Four general observations can be drawn from Table 3 and the analysis above: (1) The disaggregated price indices in China are more volatile than their aggregated counterparts. (2) Sector-specific components are a greater inflation volatility source in disaggregated prices than in aggregated indices. (3) Aggregated PPI shows higher levels of persistence

than disaggregated PPI, whereas disaggregated CPI and RPI series are stickier than their corresponding aggregated indices. (4) Inflation persistence as a result of common factors is longer than that arising from sector-specific shocks. These findings are consistent with the findings of Boivin, Giannoni and Mihov [2009] and Kaufmann and Lein [2013] for the U.S. and Swiss economies, respectively. However, one difference is that both of these papers concluded that sector-specific shocks are mostly attributable to the total variance in disaggregated prices. In contrast, we find that sector-specific shocks are the second largest source of the volatility of disaggregated prices. The inflation persistence driven by worldwide components is highest for disaggregated prices.

3.3 Correlations

Similar to Boivin, Giannoni and Mihov [2009], we find that positive correlations exist between the volatilities of common and sector-specific components in China. Table 4 presents that the correlation between the volatilities of domestic (global) and sector-specific components is 0.95 (0.69) for all disaggregated price indices. Strong correlations also exist in specific price series. In particular, PPI and CPI are similar in terms of their high correlation coefficients in domestic components. This finding indicates that firms in China adjust their prices promptly to foreign and domestic macroeconomic fundamental shocks.

We also study the correlations between price volatility and persistence. In the PPI, CPI, and RPI, weak positive correlations are observed between the volatility and the price persistence of price fluctuations generated by global components. The correlations are 0.14 for all prices, 0.24 for PPI, 0.13 for CPI, and 0.10 for RPI. However, for domestic components, the correlations between volatility and price persistence components differ. They are -0.27 for all prices, -0.52 for CPI, 0.43 for PPI, and 0.11 for RPI. Similarly, the correlations between volatility and price persistence of sector-specifc components are inconsistent among indices. They are all positive except for CPI.

Carvalho [2006] stated that the inflation in highly volatile industries was less persis-

tent, implying that the correlation between inflation volatility and its persistence was negative. Boivin, Giannoni and Mihov [2009] pointed out that the model by Carvalho [2006] was more suited for estimating the inflation volatility driven by domestic components rather than that driven by sector-specific components. Hence, the negative correlation in domestic components for disaggregated prices as a whole and the CPI series are consistent with the conclusions of the sticky-price model. However, positive correlations are not rare in empirical findings: Bils and Klenow [2004] and Cavallo [2015] provided such examples.

Apart from sticky-price model, the results in Table 4 are generally incompatible with the rational-inattention model. Beck, Hubrich and Marcellino [2016] suggested that the negative relationship between volatility and price persistence in global, domestic, and sector-specific components should be observed under rational inattention theory. The rationale is that companies are more focused on volatile factors due to limited attention and are more responsive to them, thereby leading to less price persistence. However, most of the correlations between the volatility and the persistence of these three components are positive in China.

3.4 Effects of Different Shocks

This section investigates the responses of prices to shocks. Specifically, the responses of the logarithmic disaggregated PPI, CPI, and RPI are studied, given a one standard deviation drop in global, domestic, and sector-specific components. As one of the macroeconomic common factors in China, the monetary policy of China is further examined with a one standard deviation decrease in the M2 supply of China.

Firstly, shocks from international, domestic, and sector-specific components are examined. Figure 1 presents the estimated responses of prices to the three types of shocks. The dotted lines refer to the responses of disaggregated prices, and the thick solid lines represent the mean of sectoral responses. The reactions to these three types of shocks are similar. Shocks pull down the inflation indices permanently. However, the size and

persistence of the responses are different. Compared with the shocks caused by global and sector-specific components, price changes in response to domestic components are the largest across the inflation indices. Apart from magnitude, the responses from PPI and RPI indices exhibit the longest persistence. Approximately one year is required for RPI and two years for PPI to reach a plateau after a negative domestic component shock occurs. In contrast, the CPI responses to domestic component shocks are short-lived, on average achieving a new steady level in half a year. Therefore, the average degree of persistence of sectoral CPI related to domestic components in Table 3 is considerably smaller than that of PPI (RPI), i.e., 0.18 versus 0.68 (0.48).

Inflation indices exhibit prompter and more moderate responses to global and sector-specific component shocks than those driven by domestic components. After an adverse shock attributed to global or sector-specific components, disaggregated price series move toward a new equilibrium within a few months. Except for the situation in which CPI faces sector-specific component shocks, the price indices in other cases drop less than the reactions do in the middle panels when a negative global or sector-specific component shock appears. Compared with responses to global component shocks, responses to sector-specific component shocks decay more rapidly and reach lower equilibrium levels. As reported in Table 3, the average degree of persistence of all disaggregated prices due to shocks from global components is 0.66. In contrast, the degree of persistence due to sector-specific shocks is 0.17.

Second, we also investigate price adjustments in response to monetary shocks. In line with Burdekin and Siklos [2008], we select M2 as the monetary policy instrument in China. Given a contractionary monetary policy, i.e., a one standard deviation decrease in the growth rate of M2 supply, the reactions of disaggregated prices are shown in Figure 2. Similar to Figure 1, the dotted lines refer to the responses of disaggregated prices, and the thick solid lines represent the mean of sectoral responses. The thick dashed lines are the responses of the corresponding aggregated prices. When facing a monetary shock, prices in Figure 2 drop gradually. Approximately two years are required for the impacts

on PPI and CPI to completely vanish. In contrast, the effects on RPI are less persistent. The size of the responses across inflation series also differs. RPI is the least volatile, whereas responses from disaggregated PPI and CPI are roughly identical in size.

Changes in aggregated price indices follow trends in the average response in disaggregated prices. However, a relatively large gap exists between the aggregated and average disaggregated CPIs, which suggests that the former tends to underestimate shifts in disaggregated prices. The gap is consistent with the conclusion of Kehoe and Midrigan [2015] that aggregated prices reacted slower to monetary shocks than disaggregated price series.

3.5 Urban-rural Difference

The disparity between urban and rural areas has become increasingly prominent in China. Differences in price rigidity between the two areas are an important issue in monetary policy. Table 3 presents some statistics on aggregated urban and rural inflation in terms of CPI and RPI.

Our results show that the volatility of inflation in urban and rural areas is similar across indices. The CPI variance is 0.64% for urban areas and 0.60% for rural areas. Analogously, the RPI variances are 0.64% and 0.70% in urban and rural areas, respectively. Approximately 90% of the variance in both areas is explained by domestic components. Aggregated CPI and RPI show that the inflation in rural areas is more persistent. Price persistence is mostly related to common components at home and abroad. The volatility and persistence of prices in urban and rural areas at the disaggregated level are consistent with the results in Subsection 3.2 but are not reproduced here for brevity. The disaggregated CPI and RPI in urban and rural areas are more volatile, and sector-specific components play a more crucial role for both areas than at the aggregated level.

We also study the responses of aggregated and disaggregated prices in both areas. Given a one standard deviation shock of global, domestic, and sector-specific components, as well as in M2 growth, the reactions of the inflation series are presented. Figure 3 shows

the CPI and RPI responses to shocks in urban and rural areas. The dotted lines represent the responses of disaggregated prices in urban and rural areas. The thick solid (dashed) lines indicate the average reactions of sectoral prices to shocks in urban (rural) areas. The slim solid (dashed) lines are the responses of corresponding aggregated prices to monetary shocks in urban (rural) areas.

The patterns of the responses to shocks are similar to the results of the full sample in Subsection 3.4. The price series adjust instantly and decrease rapidly to new equilibrium levels when exposed to the shocks driven by sector-specific components but react gradually when facing the shocks driven by common components at home and abroad. On average, responses to domestic component shocks are the largest, whereas responses to global components are the smallest. The effects of sector-specific shocks have the shortest persistence.

Excluding the right-hand side panels, Figure 3 indicates that the effects of global, domestic, and sector-specific shocks on disaggregated urban and rural inflation are almost identical in terms of size and persistence. In contrast, a relatively wide gap is found in the lower right-hand corner of Figure 3. The RPI responses demonstrate that the impacts of a monetary shock on urban areas are slightly smaller than those on rural areas. This point is also confirmed by the reactions of aggregated RPI. In addition, the two rightmost figures illustrate that the average reactions of disaggregated prices to monetary shocks are more than those of aggregated prices.

The analysis on volatility, persistence, and responses to shocks in urban and rural areas presents that while an urban-rural difference exists in China, the price rigidity is similar between these two areas.

3.6 Differences Between Pre- and Post-2008 Crisis

With regard to the effects of the 2008 financial crisis, we conduct a comparative analysis, in which the full sample period is divided into two periods — pre- and post-crisis periods. The U.S. National Bureau of Economic Research stated that the recession lasted from

December 2007 to June 2009. Our pre-crisis subsample ends one month before the 2008 financial crisis, from January 2001 to November 2007. The post-crisis subsample starts one month after the crisis and covers the period from July 2009 to June 2016. The lengths of both subsamples are almost identical.

Table 5 reports the results of the pre- and post-crisis periods. In both periods, the results in the table are consistent with the four conclusions drawn in Subsection 3.2. Compared with the pre-crisis subsample, the post-crisis price series are more volatile and persistent, particularly at the disaggregated level. For overall disaggregated prices, the average volatility of price indices increases by approximately 40%, and the average persistence almost doubles. The standard deviation in price volatility grows from 1.76% to 1.92% after the crisis. Furthermore, disaggregated PPI, CPI, and RPI are more volatile and persistent after the crisis.

For aggregated prices, the PPI, CPI, and RPI responses differ. The aggregated PPI results are similar to the trend in disaggregated prices. Volatility increases from 0.62% before the crisis to 0.91% after the crisis, with persistence also rising from 0.63 before to 0.78 after. Prior to 2008, PPI volatility ranges from 0.28% to 0.81% for producer and consumer goods. After the crisis, the volatility in the prices of these two goods rises to 0.31% and 1.24%, respectively. The trends of the persistence in these two sectors are identical. However, the aggregated CPI series are less volatile and persistent than the corresponding sectoral prices. The aggregated RPI indices are slightly more volatile, with considerably shorter persistence, than the disaggregated RPI indices. The volatility and persistence gaps between aggregated and disaggregated CPI and RPI are growing substantially in the post-crisis era. This finding suggests that the aggregated CPI and RPI perform less efficiently to capture rising trends in volatility and persistence among corresponding sectoral indicators after the 2008 financial crisis.

The proportion of the variance explained by both global and domestic common components increases. The volatility of the disaggregated series attributed to global components is 3% before the crisis but increases to 5% post-crisis. Although the proportion of

sectoral PPI attributable to global components remains constant, the upward trend in the overall sectoral price is confirmed by the rising R^2 of the disaggregated CPI and RPI series. Compared with the pre- and the post-crisis subsamples, domestic components also account for a higher fraction of total disaggregated volatility, rising from 39% to 62%. Thus, the proportion of variance caused by sector-specific components decreases from approximately 60% to about 40% after 2008. Along with sectoral prices, aggregated total CPI and RPI indices increase in the R^2 of global and domestic factors. Unlike CPI and RPI, aggregated PPI exhibits a drop in the variance driven by global components but a rise in variance driven by domestic factors. Given that the size of the decrease is smaller than the increase, the variance linked to sector-specific components in aggregated PPI decreases. Therefore, overall sector-specific components account for less of the price fluctuations after the crisis than before, at both aggregated and disaggregated levels.

The degree of persistence changes as well. At the aggregated level, the degree of persistence for PPI increases, whereas those of CPI and PPI decrease. However, the persistence of inflation in all indicators increases considerably at the disaggregated level. After the crisis, the persistence in all disaggregated prices rises from 0.17 to 0.31. The persistence due to sector-specific components increases sharply, although the inflation in common components is more persistent. On average, persistence increases from 0.06 to 0.20 for total sectoral price series. The total PPI at the aggregated level exhibits a similar increase, and the overall RPI increases slightly. The most obvious change in aggregated PPI after the crisis is the shift of the main driving force of price persistence from global components to domestic components.

Apart from volatility and persistence, the behaviors of price changes in response to various shocks before and after the crisis are also studied. Figure 4 presents the results. The dotted lines are the responses of sectoral prices to shocks before and after the crisis. The thick solid (dashed) lines refer to the average responses of disaggregated prices to shocks in the pre- (post-) crisis period. The slim solid (dashed) lines represent the corresponding aggregated price responses to a monetary shock before (after) the 2008 financial

crisis. The shocks are defined identically to those in Subsection 3.4, i.e., an unexpected one standard deviation drop in global, domestic, and sector-specific components, as well as in the growth rate of the M2 supply of China.

The responses of prices to shocks are similar to those presented in Figures 1 and 2. Among the three main components, global components cause the smallest changes to price. The responses to sector-specific component shocks are the most short-lived. By comparing the responses from before and after the crisis, we find that most of the dashed lines are generally lower and flatter than the solid lines, thereby indicating that average sectoral responses become larger and more persistent across price indices. This trend is most evident after a negative domestic component shock.

Monetary policy shocks are also considered. The results in the last column of Figure 4 present similar outcomes to those in the first three columns, in which larger and longer responses to negative shocks occur after the crisis. All price indices decline substantially and gradually compared with pre-crisis reactions. Aggregated price indices are also considered in Subsection 3.4. The aggregated price series enable us to capture the effects on average sectoral price. All slim dashed lines eventually dip below the solid ones. This pattern is consistent with the average change in sectoral prices. However, the problem of underestimation in average disaggregated series exists. Despite the fact that the effects of aggregated PPI coincide with those of average disaggregated PPI, aggregated CPI indices underestimate the size of reactions from sectoral prices to an adverse monetary shock, both before and after the crisis. Meanwhile, aggregated RPI indices underestimate the gap between the responses of disaggregated prices in the pre- and post-crisis periods. While some biases exist, the aggregated price is a good indicator for the overall effects of a monetary shock.

By comparing price indices at both aggregated and disaggregated levels before and after the 2008 financial crisis, we identify the following five findings: (1) The four main conclusions from Subsection 3.2 are confirmed in the pre- and post-crisis subsamples. (2) Disaggregated price series become more volatile and persistent after the crisis, but this is

not the case across all aggregated price indices. (3) The fraction of the variance explained by global and domestic components increases for most of the price indices in the post-crisis era, whereas the volatility attributed to sector-specific components decreases for price series at aggregated and disaggregate levels. (4) The average responses of sectoral price to shocks are larger and longer after the crisis. (5) Despite some underestimation biases, aggregated price indices adequately represent the average disaggregated responses to monetary shocks.

4 Conclusion

This study uses the enriched FAVAR model with global components to investigate the price stickiness in China. Based on this model, we detect latent factors from 259 monthly domestic and foreign macroeconomic series and analyze the driving forces of inflation at three levels, namely, global, domestic, and sector-specific components. Given these components, the volatility, persistence, and responses of aggregated and disaggregated prices to the three types of shocks are analyzed.

The paper contributes to the field in three aspects. It combines global factors and vast macroeconomic indicators to explore the issue of price rigidity in China. This extends the scope of previous studies which were limited to restricted variables and the domestic market. Moreover, by comparing the price rigidity before and after the crisis, we further examine the effects of 2008 financial crisis on the price rigidity in China. Also, as the price based on the three types of indices, namely, PPI, CPI, and RPI are studied, we arrive at more comprehensive and robust results.

Four main findings then emerge. First, we identify that disaggregated prices are more volatile but not necessarily stickier than aggregated prices in China. The inflation related to global and domestic common components is more persistent. Similarly, common components at home and abroad are the main driving force of price volatility, but sector-specific components are relatively more important at the disaggregated level than at the

aggregated level. Price responses to shocks are included as well. Unlike the rapid reactions to sector-specific shocks, the price responses to domestic shocks are progressive and massive.

Second, global components have small but increasing impacts in terms of volatility. Apart from that, price responses to global component shocks are gradual but modest. Global components are also the major source of price persistence in China.

Third, we assume that the increasingly wide urban-rural gap exerts significant effects on the price stickiness in China. However, there is no clear evidence indicating the existence of an urban-rural price difference. The volatility, persistence, and responses to shocks are roughly the same in both areas.

Lastly, the 2008 financial crisis makes the disaggregated prices in China more volatile and more persistent, and it results in larger and longer responses to macroeconomic fluctuations. Furthermore, domestic components are more contributive to price volatility after the crisis.

Table 1: R^2 of Top Ten Fundamental Series on Different Components

Global components				Domestic components		All factors	
Foreign variables	R^2	Domestic variables	R^2	Domestic variables	R^2	Domestic variables	R^2
Equity Market Index (EU)	0.70	Savings Deposits Rate	0.14	Floor Space Sold: Commodity Bldg:	0.96	Real Estate Investment: Total	0.95
Equity Market Index (US)	0.69	National Interbank Bond Repurchase: 2 Month	0.13	Floor Space Sold: Residential: Total	0.96	Real Estate Inv: Residential Buildings	0.95
Equity Market Index (UK)	0.62	Real Effective Exchange Rate Index	0.07	Real Estate Inv: Residential Buildings	0.96	Real Estate Inv: Commercial Buildings	0.95
Equity Market Index (KR)	0.58	Exchange Rate Against US$	0.06	Real Estate Investment: Total	0.95	Index: Shanghai Stock Exchange: Composite	0.95
Policy Rate: Discount Window Base Rate (HK)	0.57	Industrial Production: Diesel Oil	0.05	Index: Shanghai Stock Exchange: Composite	0.95	Real Estate Inv: Office Buildings	0.94
Equity Market Index (TW)	0.55	Industrial Production: Steel	0.05	Real Estate Inv: Commercial Buildings	0.94	Market Capitalization: Shanghai Stock Exchange: A Shares	0.94
Equity Market Index (JP)	0.52	Central Bank Base Interest Rate: Annual	0.05	Market Capitalization: Shanghai Stock Exchange: A Shares	0.94	Consumer Price Index	0.93
Equity Market Index (HK)	0.43	Industrial Production: Household Refrigerator	0.04	Real Estate Inv: Office Buildings	0.93	Insurance Companies - Bank Deposit	0.92
Policy Rate: Discount Rate(TW)	0.43	Industrial Production: Semiconductor Integrated Circuit	0.04	Insurance Companies - Bank Deposit	0.93	Retail Price Index	0.90
Effective Federal Funds Rate (US)	0.41	Money Supply M0	0.04	Market Capitalization: Shanghai Stock Exchange: B Shares	0.92	Floor Space Under Construction	0.90

Table 2: R^2 of Selected Series on Different Components

	Global components	Domestic components	All components
Industrial Production	0.00	0.56	0.56
Consumer Price Index	0.00	0.91	0.93
Producer Price Index	0.00	0.85	0.85
Retail Price Index	0.00	0.89	0.90
Consumer Confidence Index	0.01	0.04	0.06
Consumer Satisfactory Index	0.02	0.06	0.07
Consumer Expectation Index	0.01	0.04	0.06
Exports fob	0.00	0.43	0.43
Imports cif	0.00	0.55	0.56
Floor Space Under Construction	0.02	0.81	0.90
FDI: No. of Contract	0.01	0.89	0.86
FDI: Utilized	0.00	0.82	0.82
Foreign Reserves	0.00	0.39	0.40
National Interbank Offered Rate: Overnight	0.00	0.55	0.54
Central Bank Base Interest Rate: Three Months or Less	0.01	0.76	0.79
Savings Deposits Rate	0.14	0.04	0.27
Time Deposits Rate: One Year	0.04	0.13	0.13
Exchange Rate against US$: Monthly Average	0.06	0.27	0.32
Real Effective Exchange Rate Index	0.07	0.13	0.19
All China's Fundamental Average	0.01	0.55	0.56

Table 3: Volatility and Persistence of China's Inflation

		St. Dev. (%)				R^2		Persistence			
		Inflation	Global components	Domestic components	Sector-specific	Global components	Domestic components	Inflation	Global components	Domestic components	Sector-specific
Aggregated series											
PPI	Total	0.90	0.01	0.83	0.35	0.00	0.85	0.77	0.53	0.81	0.49
	Producer Goods	1.18	0.02	1.06	0.52	0.00	0.81	0.74	0.52	0.81	0.51
	Consumer Goods	0.34	0.03	0.29	0.20	0.01	0.71	0.56	0.62	0.80	-0.01
CPI	Total	0.64	0.03	0.61	0.17	0.00	0.91	0.05	0.60	0.02	0.01
	Urban	0.64	0.04	0.60	0.17	0.00	0.89	0.02	0.68	-0.01	-0.08
	Rural	0.60	0.05	0.58	0.18	0.01	0.93	0.17	0.55	0.14	0.08
RPI	Total	0.65	0.03	0.62	0.20	0.00	0.89	0.20	0.54	0.18	-0.03
	Urban	0.64	0.04	0.60	0.22	0.00	0.87	0.16	0.55	0.17	-0.04
	Rural	0.70	0.02	0.67	0.21	0.00	0.92	0.24	0.53	0.18	0.01
Disaggregated series											
All	Average	1.58	0.16	1.13	1.07	0.02	0.49	0.29	0.66	0.48	0.17
	Median	0.70	0.07	0.54	0.51	0.01	0.53	0.37	0.69	0.59	0.19
	Minimum	0.18	0.00	0.02	0.14	0.00	0.02	-0.31	0.52	-0.26	-0.33
	Maximum	9.56	1.33	7.01	6.50	0.06	0.99	0.78	0.75	0.82	0.51
	St. Dev.	1.90	0.20	1.37	1.33	0.01	0.23	0.29	0.08	0.34	0.19
PPI	Average	1.46	0.17	1.04	0.99	0.01	0.51	0.35	0.67	0.68	0.12
	Median	0.75	0.07	0.62	0.54	0.01	0.54	0.50	0.70	0.77	0.18
	Minimum	0.35	0.00	0.10	0.27	0.00	0.03	-0.31	0.52	0.06	-0.33
	Maximum	8.06	1.33	4.66	5.87	0.05	0.99	0.78	0.75	0.82	0.51
	St. Dev.	1.58	0.26	1.05	1.12	0.01	0.23	0.33	0.07	0.19	0.24
CPI	Average	2.72	0.25	2.01	1.83	0.02	0.57	0.20	0.66	0.18	0.20
	Median	2.05	0.17	1.67	1.31	0.02	0.59	0.16	0.66	0.08	0.15
	Minimum	0.34	0.05	0.25	0.22	0.00	0.34	-0.31	0.53	-0.26	-0.24
	Maximum	9.56	0.67	7.01	6.50	0.06	0.93	0.61	0.75	0.80	0.49
	St. Dev.	2.78	0.21	2.01	1.95	0.02	0.13	0.30	0.07	0.35	0.19
RPI	Average	0.91	0.09	0.62	0.62	0.02	0.40	0.30	0.66	0.48	0.21
	Median	0.55	0.04	0.29	0.40	0.01	0.46	0.34	0.70	0.47	0.24
	Minimum	0.18	0.02	0.02	0.14	0.00	0.02	-0.08	0.52	-0.11	-0.11
	Maximum	2.69	0.31	1.95	2.12	0.06	0.91	0.61	0.75	0.80	0.44
	St. Dev.	0.86	0.09	0.67	0.60	0.01	0.27	0.21	0.09	0.30	0.14

Table 4: Correlations of Volatility and Persistence

	Standard Deviation			Persistence			
	Global components	Domestic components	Sector-specific	Inflation	Global components	Domestic components	Sector-specific
All Prices							
Standard Deviation							
Inflation	0.64	0.99	0.99	-0.02	-0.07	-0.26	0.17
Global components	1.00	0.57	0.69	0.22	0.14	0.08	0.36
Domestic components		1.00	0.95	0.00	-0.07	-0.27	0.20
Sector-specific			1.00	-0.03	-0.06	-0.23	0.17
Persistence							
Inflation				1.00	0.01	0.69	0.76
Global components					1.00	0.20	0.10
Domestic components						1.00	0.33
PPI							
Standard Deviation							
Inflation	0.93	0.97	0.99	0.35	0.19	0.34	0.43
Global components	1.00	0.87	0.95	0.28	0.24	0.29	0.33
Domestic components		1.00	0.94	0.46	0.15	0.43	0.53
Sector-specific			1.00	0.28	0.20	0.29	0.35
Persistence							
Inflation				1.00	-0.05	0.81	0.87
Global components					1.00	-0.02	-0.01
Domestic components						1.00	0.67
CPI							
Standard Deviation							
Inflation	0.32	0.99	0.99	-0.28	-0.35	-0.54	-0.03
Global components	1.00	0.25	0.39	0.32	0.13	0.04	0.61
Domestic components		1.00	0.97	-0.27	-0.31	-0.52	-0.01
Sector-specific			1.00	-0.28	-0.37	-0.54	-0.03
Persistence							
Inflation				1.00	0.04	0.86	0.73
Global components					1.00	0.14	0.34
Domestic components						1.00	0.48
RPI							
Standard Deviation							
Inflation	0.83	0.97	0.93	0.20	0.07	0.25	0.21
Global components	1.00	0.69	0.94	0.19	0.10	0.52	0.31
Domestic components		1.00	0.83	0.15	0.06	0.11	0.13
Sector-specific			1.00	0.28	0.10	0.45	0.36
Persistence							
Inflation				1.00	0.01	0.60	0.82
Global components					1.00	0.35	0.13
Domestic components						1.00	0.54

Table 5: Volatility and Persistence of China's Inflation Before and After the 2008 Financial Crisis

		St. Dev. (%)				R^2		Persistence			
		Inflation	Global components	Domestic components	Sector-specific	Global components	Domestic components	Inflation	Global components	Domestic components	Sector-specific
Panel A: Pre-2008 Crisis											
Aggregated series											
PPI	Total	0.62	0.08	0.54	0.27	0.01	0.76	0.63	0.83	0.60	0.19
	Producer Goods	0.81	0.12	0.69	0.36	0.02	0.73	0.62	0.84	0.58	0.13
	Consumer Goods	0.28	0.01	0.20	0.20	0.00	0.50	0.29	0.41	0.80	-0.08
CPI	Total	0.61	0.04	0.58	0.19	0.00	0.89	0.05	0.57	0.02	0.14
	Urban	0.66	0.03	0.62	0.21	0.00	0.89	0.01	0.61	-0.03	0.08
	Rural	0.57	0.04	0.53	0.22	0.00	0.84	0.14	0.43	0.16	0.13
RPI	Total	0.60	0.04	0.54	0.24	0.00	0.82	0.16	0.62	0.12	0.02
	Urban	0.60	0.03	0.53	0.27	0.00	0.78	0.12	0.48	0.10	0.00
	Rural	0.62	0.05	0.57	0.23	0.01	0.85	0.26	0.71	0.18	0.12
Disaggregated series											
All	Average	1.39	0.15	0.95	0.97	0.03	0.39	0.17	0.59	0.34	0.06
	Median	0.67	0.08	0.35	0.56	0.02	0.35	0.18	0.62	0.42	0.05
	Minimum	0.12	0.01	0.05	0.11	0.00	0.05	-0.47	0.26	-0.28	-0.44
	Maximum	9.07	0.76	6.38	6.72	0.27	0.88	0.65	0.85	0.76	0.54
	St. Dev.	1.76	0.16	1.28	1.23	0.05	0.21	0.27	0.21	0.26	0.23
PPI	Average	1.17	0.15	0.72	0.87	0.03	0.33	0.16	0.64	0.46	-0.06
	Median	0.68	0.09	0.35	0.59	0.01	0.28	0.23	0.72	0.51	-0.06
	Minimum	0.31	0.01	0.08	0.25	0.00	0.05	-0.42	0.26	-0.14	-0.44
	Maximum	6.31	0.60	4.59	4.15	0.26	0.75	0.65	0.84	0.76	0.44
	St. Dev.	1.28	0.14	0.95	0.85	0.04	0.20	0.33	0.21	0.20	0.23
CPI	Average	2.58	0.20	1.90	1.73	0.02	0.53	0.18	0.56	0.20	0.19
	Median	2.16	0.17	1.68	1.36	0.01	0.58	0.16	0.58	0.36	0.12
	Minimum	0.23	0.03	0.12	0.18	0.00	0.21	-0.47	0.28	-0.28	-0.17
	Maximum	9.07	0.76	6.38	6.72	0.12	0.88	0.55	0.85	0.63	0.54
	St. Dev.	2.67	0.20	1.85	1.95	0.03	0.14	0.25	0.22	0.34	0.21
RPI	Average	0.79	0.13	0.51	0.54	0.05	0.35	0.17	0.57	0.32	0.08
	Median	0.43	0.06	0.22	0.32	0.04	0.32	0.14	0.60	0.35	0.07
	Minimum	0.12	0.01	0.05	0.11	0.00	0.06	-0.40	0.26	-0.02	-0.31
	Maximum	2.44	0.61	2.03	1.64	0.27	0.84	0.58	0.85	0.69	0.47
	St. Dev.	0.74	0.15	0.61	0.47	0.07	0.22	0.24	0.19	0.20	0.19
Panel B: Post-2008 Crisis											
Aggregated series											
PPI	Total	0.91	0.04	0.88	0.26	0.00	0.95	0.78	0.22	0.82	0.45
	Producer Goods	1.24	0.07	1.18	0.38	0.00	0.91	0.75	0.11	0.80	0.47
	Consumer Goods	0.31	0.01	0.27	0.16	0.00	0.74	0.59	0.20	0.77	0.16
CPI	Total	0.56	0.04	0.56	0.14	0.01	0.99	-0.17	0.72	0.08	-0.03
	Urban	0.51	0.04	0.50	0.14	0.01	0.96	-0.15	0.32	0.07	-0.09
	Rural	0.54	0.03	0.53	0.12	0.00	0.96	0.02	0.19	0.18	0.09
RPI	Total	0.61	0.05	0.57	0.19	0.01	0.85	0.07	0.62	0.28	0.04
	Urban	0.60	0.06	0.55	0.20	0.01	0.83	0.00	0.67	0.24	-0.02
	Rural	0.69	0.03	0.66	0.20	0.00	0.89	0.05	0.52	0.23	0.03
Disaggregated series											
All	Average	1.58	0.29	1.25	0.93	0.05	0.62	0.31	0.53	0.39	0.20
	Median	0.65	0.12	0.57	0.34	0.03	0.66	0.40	0.59	0.45	0.20
	Minimum	0.14	0.01	0.06	0.11	0.00	0.07	-0.43	0.11	-0.74	-0.30
	Maximum	9.45	2.04	7.18	6.17	0.22	0.99	0.78	0.74	0.84	0.60
	St. Dev.	1.92	0.42	1.45	1.29	0.05	0.24	0.32	0.21	0.41	0.18
PPI	Average	1.47	0.19	1.16	0.86	0.03	0.61	0.43	0.50	0.60	0.23
	Median	0.79	0.11	0.59	0.37	0.01	0.62	0.56	0.49	0.79	0.27
	Minimum	0.26	0.01	0.14	0.19	0.00	0.19	-0.15	0.13	-0.31	-0.30
	Maximum	8.41	1.10	5.50	5.93	0.15	0.99	0.78	0.74	0.84	0.60
	St. Dev.	1.63	0.24	1.20	1.10	0.04	0.22	0.30	0.20	0.34	0.20
CPI	Average	2.74	0.51	2.16	1.62	0.05	0.72	0.19	0.54	0.18	0.16
	Median	1.95	0.23	1.84	0.52	0.04	0.70	0.21	0.68	0.23	0.14
	Minimum	0.43	0.06	0.36	0.23	0.00	0.38	-0.43	0.11	-0.74	-0.21
	Maximum	9.45	2.04	7.18	6.17	0.22	0.96	0.72	0.74	0.79	0.45
	St. Dev.	2.74	0.62	2.04	1.92	0.05	0.18	0.37	0.25	0.47	0.17
RPI	Average	0.89	0.23	0.69	0.52	0.08	0.55	0.25	0.55	0.33	0.20
	Median	0.49	0.10	0.38	0.31	0.08	0.61	0.36	0.65	0.26	0.23
	Minimum	0.14	0.02	0.06	0.11	0.00	0.07	-0.31	0.12	-0.60	-0.09
	Maximum	2.98	1.06	2.46	2.14	0.20	0.96	0.57	0.74	0.79	0.47
	St. Dev.	0.89	0.33	0.72	0.56	0.06	0.28	0.26	0.21	0.36	0.16

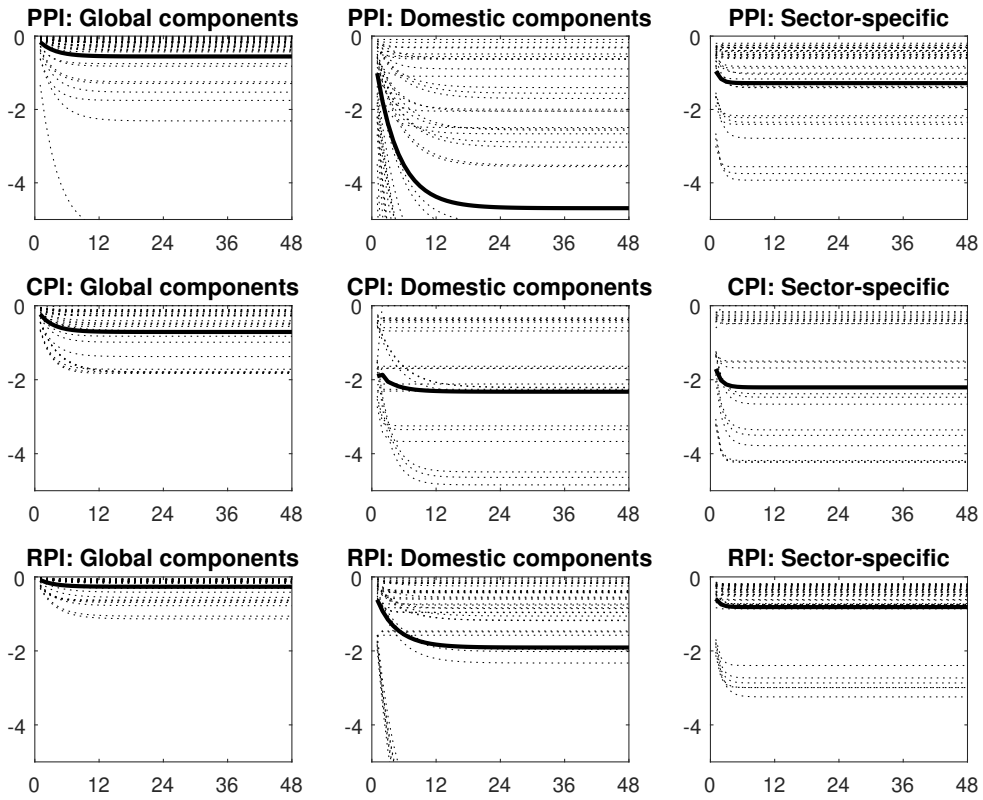

Figure 1: Responses of Prices to Different Shocks

Note: The dotted lines refer to the responses from disaggregated prices, and the thick solid lines represent the mean of the sectoral responses.

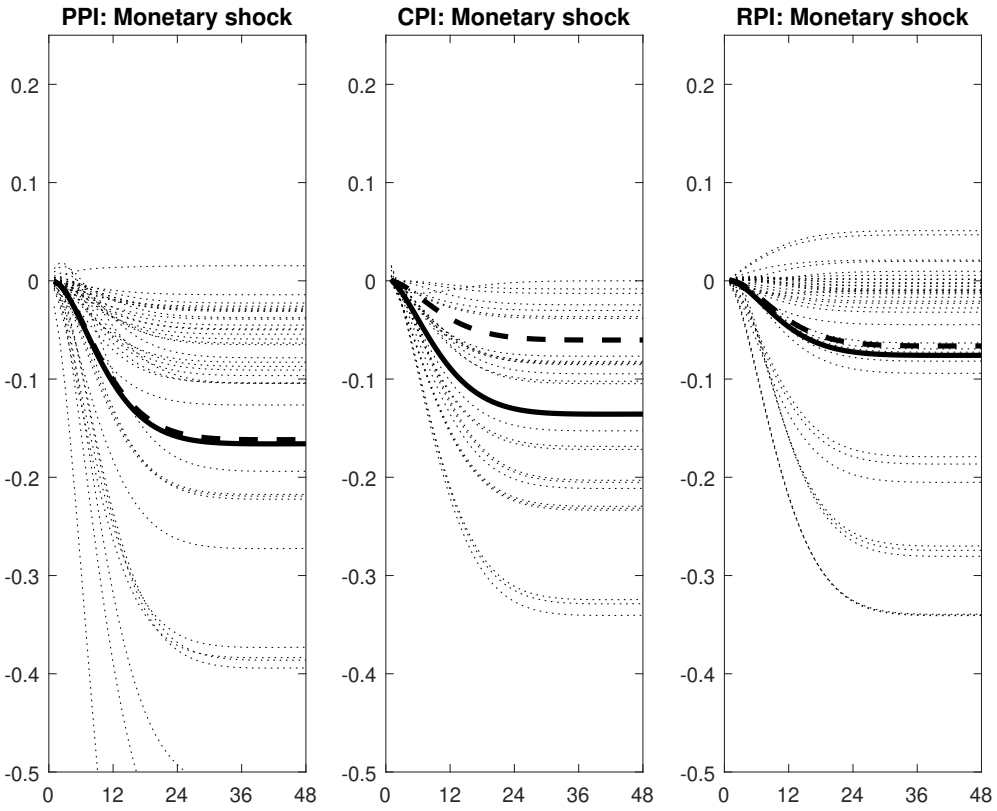

Figure 2: Responses of Prices to Monetary Shocks

Note: The monetary shock is a one standard deviation decrease in the growth rate of China's M2 supply. The dotted lines refer to the responses from disaggregated prices. The thick solid lines represent the mean of the sectoral responses. The thick dashed lines are the responses from the corresponding aggregated prices.

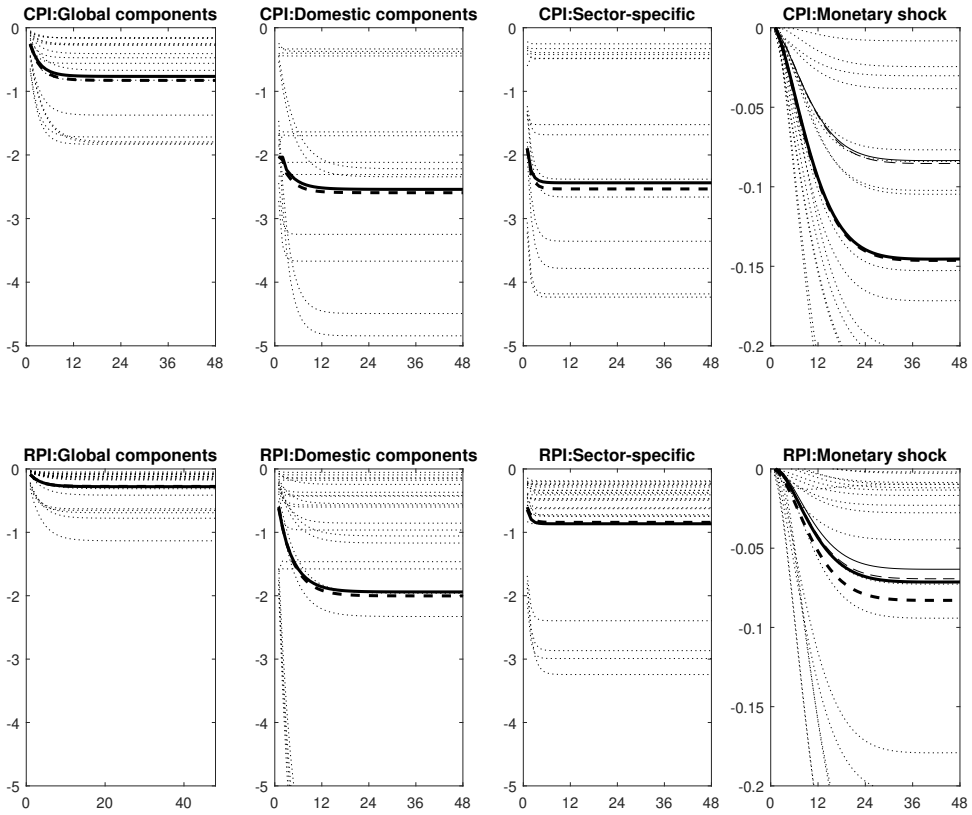

Figure 3: Responses of Prices to Shocks in Urban and Rural Areas

Note: The monetary shock is a one standard deviation decrease in the growth rate of China's M2 supply. The dotted lines represent the responses of disaggregated prices in urban and rural areas. The thick solid (dashed) lines indicate the average reactions of sectoral prices to shocks in urban (rural) areas. The slim solid (dashed) lines are the responses of corresponding aggregated prices to monetary shocks in urban (rural) areas.

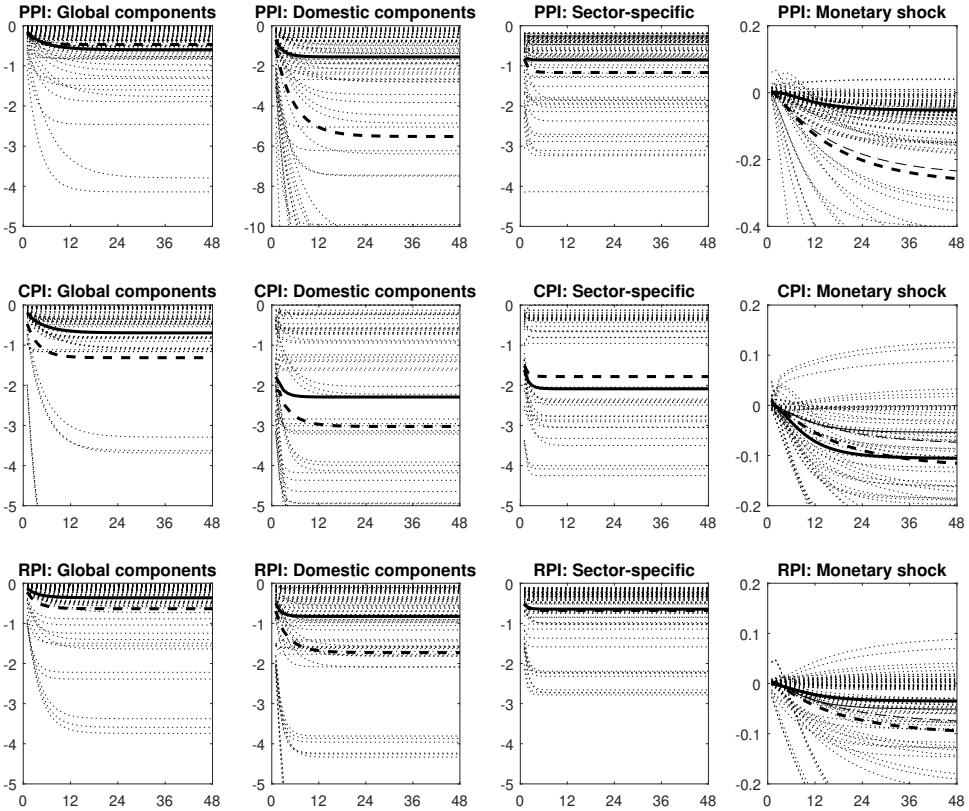

Figure 4: Responses of Prices to Before and After the Financial Crisis

Note: The monetary shock is a one standard deviation decrease in the growth rate of China's M2 supply. The dotted lines are the responses of sectoral prices to shocks before and after the crisis. The thick solid (dashed) lines refer to the average responses of disaggregated prices to shocks in the pre- (post-) crisis period. The slim solid (dashed) lines represent the corresponding aggregated price responses to a monetary shock before (after) the 2008 financial crisis.

Appendices

A Data Details

Format of the dataset employed is as following: series mnemonic; time span; description appeared in the database; region; transformation code and seasonality adjustment code. The transformation codes are: 1 - no transformation applied; 2 - first difference; 4 - logarithm; 5 - first difference of logarithm. The seasonality adjustment codes are: NSA - no seasonality adjustment; SA - seasonality adjustment applied. Obtained from CEIC, Wind, Federal Reserve Economic Data (FRED) and OECD databases, the dataset includes 259 monthly macroeconomic series.

No.	Series	Period	Detail	Region	Code	Seasonal Adj.
1	IPIEU	2001M1-2016M6	IPI: swda: EU 28	EU	5	NSA
2	CPIEU	2001M1-2016M6	Consumer Price Index: YoY	EU	5	NSA
3	SPREU	2001M1-2016M6	Equity Market Index: Month End: Dow Jones Euro Stoxx	EU	5	SA
4	PREU	2001M1-2016M6	Policy Rate: Month End: Main Refinancing Operations	EU	5	NSA
5	UREU	2001M1-2016M6	Unemployment Rate: sa: EU 28	EU	5	NSA
6	MSEU	2001M1-2016M6	Money Supply M2: swda: Outstanding	EU	5	NSA
7	GBYEU	2001M1-2016M6	Government Bond Yield: Monthly Average: Euro: 10 Years	EU	5	SA
8	SPRUK	2001M1-2016M6	UK: Index: Share Price: FTSE 100	UK	5	NSA
9	CPIUK	2001M1-2016M6	Consumer Price Index: YoY	UK	5	NSA
10	PRUK	2001M1-2016M6	Policy Rate: Month End: Base Rate	UK	5	NSA
11	SIRUK	2001M1-2016M6	Short Term Interest Rate: Month End: ICE LIBOR: 3 Months	UK	5	NSA
12	MSUK	2001M1-2016M6	M2 Money Stock (SA)	UK	5	NSA
13	GBYUK	2001M1-2016M6	Government Bond Yield: Zero Coupon: 10 Years	UK	5	NSA
14	IPIUS	2001M1-2016M6	Industrial Production Index: sa	US	5	NSA

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No.	Series	Period	Detail	Region	Code	Seasonal Adj.
15	CPIUS	2001M1-2016M6	Consumer Price Index: YoY: sa	US	5	NSA
16	URUS	2001M1-2016M6	Civilian Unemployment Rate (Seasonally Adjusted)	US	5	NSA
17	PRUS	2001M1-2016M6	Effective Federal Funds Rate	US	5	NSA
18	SPRUS	2001M1-2016M6	Index: Standard & Poors: 500	US	5	NSA
19	SIRUS	2001M1-2016M6	3-Month Treasury Bill	US	5	NSA
20	MSUS	2001M1-2016M6	M2 Money Stock (SA)	US	5	NSA
21	GBYUS	2001M1-2016M6	10-Year Treasury Constant Maturity Rate (NSA)	US	5	NSA
22	URHK	2001M1-2016M6	Unemployment Rate: sa	Hong Kong	5	NSA
23	CPIHK	2001M1-2016M6	Consumer Price Index: YoY: sa	Hong Kong	5	NSA
24	SPRHK	2001M1-2016M6	Equity Market Index: Month End: Hang Seng	Hong Kong	5	NSA
25	PRHK	2001M1-2016M6	Policy Rate: Month End: Discount Window Base Rate	Hong Kong	5	NSA
26	SIRHK	2001M1-2016M6	Short Term Interest Rate: Month End: HIBOR Fixing: 3 Months	Hong Kong	5	NSA
27	GBYHK	2001M1-2016M6	HK: Treasury Bill Rate: Government Securities	Hong Kong	1	NSA
28	CPIJP	2001M1-2016M6	Consumer Price Index: YoY: sa	Japan	5	NSA
29	IPIJP	2001M1-2016M6	JP: Industrial Production Index: Final Goods; Seasonally Adjusted	Japan	5	NSA
30	URJP	2001M1-2016M6	Unemployment Rate	Japan	5	NSA
31	SPRJP	2001M1-2016M6	Nikkei 225	Japan	5	NSA
32	MSJP	2001M1-2016M6	M2 Money Supply (SA)	Japan	5	NSA
33	SIRJP	2001M1-2016M6	Short Term Interest Rate: TIBOR: 3 Months	Japan	5	SA
34	GBYJP	2001M1-2016M6	Government Bond Yield: 10 Years	Japan	1	NSA
35	IPIKR	2001M1-2016M6	Industrial Production Index (IPI): sa: All Industry (AI)	Korea	5	NSA
36	CPIKR	2001M1-2016M6	Consumer Price Index: YoY	Korea	5	NSA
37	URKR	2001M1-2016M6	Unemployment Rate: sa	Korea	5	NSA
38	SPRKR	2001M1-2016M6	Equity Market Index: Month End: KOSPI	Korea	5	NSA

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No.	Series	Period	Detail	Region	Code	Seasonal Adj.
39	SIRKR	2001M1-2016M6	Short Term Interest Rate: 91 days on CDs	Korea	5	NSA
40	MSKR	2001M1-2016M6	Money Supply: New M2: sa	Korea	5	SA
41	GBYKR	2001M1-2016M6	Government Bond Yield: 10 Years	Korea	5	NSA
42	IPITW	2001M1-2016M6	Industrial Production Index (IPI): Seasonally Adjusted	Taiwan	5	NSA
43	URTW	2001M1-2016M6	Unemployment Rate: sa	Taiwan	5	NSA
44	WPITW	2001M1-2016M6	WPI: Seasonally Adjusted	Taiwan	5	NSA
45	SPRTW	2001M1-2016M6	TWSE: Equity Market Index: TAIEX Capitalization Weighted: Month End	Taiwan	5	NSA
46	PRTW	2001M1-2016M6	Policy Rate: Month End: Discount Rate	Taiwan	1	NSA
47	SIRTW	2001M1-2016M6	Commercial Paper Rate: Secondary Market: 91 to 180 Days	Taiwan	1	NSA
48	MSTW	2001M1-2016M6	Money Supply M2: Monthly Average: sa	Taiwan	5	NSA
49	GBYTW	2001M1-2016M6	Government Bonds: Secondary Market: 10 Year	Taiwan	1	NSA
50	IPICN	2001M1-2016M6	Industrial Production	China	5	NSA
51	IPICN1	2001M1-2016M6	Industrial Production: Televison Sets: Colour	China	5	SA
52	IPICN2	2001M1-2016M6	Industrial Production: Household Washing Machines	China	5	SA
53	IPICN3	2001M1-2016M6	Industrial Production: Household Refrigerator	China	5	SA
54	IPICN4	2001M1-2016M6	Industrial Production: Air Conditioner	China	5	SA
55	IPICN5	2001M1-2016M6	Industrial Production: Cloth	China	5	SA
56	IPICN6	2001M1-2016M6	Industrial Production: Sugar	China	5	SA
57	IPICN7	2001M1-2016M6	Industrial Production: Salt	China	5	SA
58	IPICN8	2001M1-2016M6	Industrial Production: Synthetic Detergents	China	5	SA
59	IPICN9	2001M1-2016M6	Industrial Production: Plastic Products (PP)	China	5	SA
60	IPICN10	2001M1-2016M6	Industrial Production: Chemical Fibre: Synthetic	China	5	SA
61	IPICN11	2001M1-2016M6	Industrial Production: Processed Crude Oil	China	5	SA

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No.	Series	Period	Detail	Region	Code	Seasonal Adj.
62	IPICN12	2001M1-2016M6	Industrial Production: Gasoline	China	5	SA
63	IPICN13	2001M1-2016M6	Industrial Production: Kerosene	China	5	SA
64	IPICN14	2001M1-2016M6	Industrial Production: Diesel Oil	China	5	SA
65	IPICN15	2001M1-2016M6	Industrial Production: Power Generated	China	5	SA
66	IPICN16	2001M1-2016M6	Industrial Production: Coke	China	5	SA
67	IPICN17	2001M1-2016M6	Industrial Production: Steel	China	5	SA
68	IPICN18	2001M1-2016M6	Industrial Production: Steel Products	China	5	SA
69	IPICN19	2001M1-2016M6	Industrial Production: Sulphuric Acid	China	5	SA
70	IPICN20	2001M1-2016M6	Industrial Production: Chemical Fertilizer(100% purity)	China	5	SA
71	IPICN21	2001M1-2016M6	Industrial Production: Rubber Tyre	China	5	SA
72	IPICN22	2001M1-2016M6	Industrial Production: Synthetic Rubber	China	5	SA
73	IPICN23	2001M1-2016M6	Industrial Production: Cement	China	5	SA
74	IPICN24	2001M1-2016M6	Industrial Production: Plated Glass	China	5	SA
75	IPICN25	2001M1-2016M6	Industrial Production: Automobiles	China	5	SA
76	IPICN26	2001M1-2016M6	Industrial Production: Computer: Micro Computer	China	5	SA
77	IPICN27	2001M1-2016M6	Industrial Production: Semiconductor Integrated Circuit	China	5	SA
78	CPICN	2001M1-2016M6	Consumer Price Index	China	5	NSA
79	PPICN	2001M1-2016M6	Producer Price Index	China	5	NSA
80	RPICN	2001M1-2016M6	Retail Price Index	China	5	NSA
81	CST1	2001M1-2016M6	Floor Space Started: ytd: Commodity Bldg	China	4	SA
82	CST2	2001M1-2016M6	Value of Building Completed: ytd: Residential: Total	China	5	SA
83	CST3	2001M1-2016M6	Commodity Bldg Selling Price: YTD Average	China	5	SA

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No.	Series	Period	Detail	Region	Code	Seasonal Adj.
84	CST4	2001M1-2016M6	Commodity Bldg Selling Price: YTD Average: Residential	China	5	SA
85	CST5	2001M1-2016M6	Commodity Building Sold: ytd: Total	China	5	SA
86	CST6	2001M1-2016M6	Commodity Building Sold: ytd: Residential: Total	China	5	SA
87	CST7	2001M1-2016M6	Floor Space under Construction: ytd: Commodity Bldg (CB)	China	4	SA
88	CST8	2001M1-2016M6	Floor Space under Construction: ytd: CB: Residential	China	4	SA
89	CST9	2001M1-2016M6	Floor Space under Construction: ytd: Commodity Bldg: Office	China	4	SA
90	CST10	2001M1-2016M6	Floor Space under Construction: ytd: Commodity Bldg: Commerce	China	4	SA
91	CST11	2001M1-2016M6	Floor Space Completed: ytd: Commodity (CB): Residential	China	4	SA
92	CST12	2001M1-2016M6	Floor Space Sold: Commodity Bldg: ytd	China	4	SA
93	CST13	2001M1-2016M6	Floor Space Sold: ytd: Residential: Total	China	4	SA
94	CST14	2001M1-2016M6	Real Estate Investment: ytd: Total	China	4	SA
95	CST15	2001M1-2016M6	Real Estate Inv: ytd: Residential Buildings	China	4	SA
96	CST16	2001M1-2016M6	Real Estate Inv: ytd: Office Buildings	China	4	SA
97	CST17	2001M1-2016M6	Real Estate Inv: ytd: Commercial Buildings	China	4	SA
98	PBF1	2001M1-2016M6	Government Revenue	China	5	SA
99	PBF2	2001M1-2016M6	Government Expenditure	China	5	SA
100	PBF3	2001M1-2016M6	Government Revenue: Taxes	China	5	SA
101	CSMI1	2001M1-2016M6	Consumer Confidence Index	China	5	NSA
102	CSMI2	2001M1-2016M6	Consumer Satisfactory Index	China	5	NSA
103	CSMI3	2001M1-2016M6	Consumer Expectation Index	China	5	NSA
104	FT1	2001M1-2016M6	Exports fob	China	5	SA
105	FT2	2001M1-2016M6	Imports cif	China	5	SA

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No.	Series	Period	Detail	Region	Code	Seasonal Adj.
106	MN1	2001M1-2016M6	Money Supply M0 Growth Rate	China	4	SA
107	MN2	2001M1-2016M6	Money Supply M1 Growth Rate	China	4	SA
108	MN3	2001M1-2016M6	Money Supply M2 Growth Rate	China	4	SA
109	MN4	2001M1-2016M6	Saving Deposits	China	5	SA
110	MN5	2001M1-2016M6	Time Deposits	China	5	SA
111	MN6	2001M1-2016M6	Financial Institution Deposits	China	5	SA
112	MN7	2001M1-2016M6	Financial Institution Loans	China	5	SA
113	MN8	2001M1-2016M6	Foreign Reserves	China	5	NSA
114	INT1	2001M1-2016M6	National Interbank Offered Rate: Weighted Avg: NIBFC: Overnight	China	1	NSA
115	INT2	2001M1-2016M6	National Interbank Offered Rate: Weighted Avg: NIBFC: 7 Days	China	1	NSA
116	INT3	2001M1-2016M6	National Interbank Offered Rate: Weighted Avg: NIBFC: 30 Days	China	1	NSA
117	INT4	2001M1-2016M6	National Interbank Offered Rate: Weighted Avg: NIBFC: 90 Days	China	1	NSA
118	INT5	2001M1-2016M6	National Interbank Bond Repurchase: WA Rate: NIBFC: 7 Day	China	1	NSA
119	INT6	2001M1-2016M6	National Interbank Bond Repurchase: WA Rate: NIBFC: 1 Month	China	1	NSA
120	INT7	2001M1-2016M6	National Interbank Bond Repurchase: WA Rate: NIBFC: 2 Month	China	1	NSA
121	INT8	2001M1-2016M6	Policy Rate: Month End: Rediscount Rate	China	5	NSA
122	INT9	2001M1-2016M6	Central Bank Base Interest Rate: Less Than 20 Days	China	5	NSA
123	INT10	2001M1-2016M6	Central Bank Base Interest Rate: 3 Months or Less	China	5	NSA
124	INT11	2001M1-2016M6	Central Bank Base Interest Rate: Annual	China	5	NSA

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No.	Series	Period	Detail	Region	Code	Seasonal Adj.
125	INT12	2001M1-2016M6	Central Bank Base Interest Rate: Required Reserve	China	5	NSA
126	INT13	2001M1-2016M6	Central Bank Base Interest Rate: Excess Reserve	China	5	NSA
127	INT14	2001M1-2016M6	Savings Deposits Rate	China	5	NSA
128	INT15	2001M1-2016M6	Time Deposits Rate: 1 Year	China	5	NSA
129	INT16	2001M1-2016M6	Exchange Rate against US$: Monthly Average	China	5	NSA
130	INT17	2001M1-2016M6	Real Effective Exchange Rate Index: BIS: 2010=100: Broad	China	5	SA
131	INT18	2001M1-2016M6	Nominal Effective Exchange Rate Index: BIS: 2010=100: Broad	China	5	NSA
132	INV1	2001M1-2016M6	FDI: No of Contract: ytd: Total	China	5	SA
133	INV2	2001M1-2016M6	FDI: Utilized: ytd: Total	China	4	SA
134	INV3	2001M1-2016M6	Fixed Assets Investment: ytd	China	5	SA
135	SPR1	2001M1-2016M6	Index: Shanghai Stock Exchange: Composite	China	5	NSA
136	SPR2	2001M1-2016M6	Index: Shanghai Stock Exchange: A Share	China	5	NSA
137	SPR3	2001M1-2016M6	Index: Shanghai Stock Exchange: B Share	China	5	NSA
138	SPR4	2001M1-2016M6	PE Ratio: Shanghai Stock Ex: All Shares: Wgt Avg by Issued Volume	China	5	SA
139	SPR5	2001M1-2016M6	PE Ratio: Shanghai Stock Ex: A Shares: Wgt Avg by Issued Volume	China	5	SA
140	SPR6	2001M1-2016M6	PE Ratio: Shanghai Stock Ex: B Shares: Wgt Avg by Issued Volume	China	5	NSA
141	SPR7	2001M1-2016M6	Index: Shenzhen Stock Exchange: Composite	China	5	NSA
142	SPR8	2001M1-2016M6	Index: Shenzhen Stock Exchange: A Share	China	5	NSA
143	SPR9	2001M1-2016M6	Index: Shenzhen Stock Exchange: B Share	China	5	SA
144	SPR10	2001M1-2016M6	PE Ratio: Shenzhen Stock Exchange: Stocks	China	5	NSA

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No.	Series	Period	Detail	Region	Code	Seasonal Adj.
145	SPR11	2001M1-2016M6	Market Capitalization: Shanghai Stock Exchange: Stocks	China	5	NSA
146	SPR12	2001M1-2016M6	Market Capitalization: Shanghai Stock Exchange: A Shares	China	5	NSA
147	SPR13	2001M1-2016M6	Market Capitalization: Shanghai Stock Exchange: B Shares	China	5	NSA
148	SPR14	2001M1-2016M6	Market Capitalization: Shenzhen Stock Exchange: Stocks	China	5	NSA
149	SPR15	2001M1-2016M6	Market Capitalization: Shenzhen Stock Exchange: Stocks: A Share	China	5	NSA
150	SPR16	2001M1-2016M6	Market Capitalization: Shenzhen Stock Exchange: Stocks: B Share	China	5	NSA
151	SPR17	2001M1-2016M6	Turnover: Volume: Shanghai Stock Exchange: Stocks	China	4	SA
152	SPR18	2001M1-2016M6	Turnover: Value: Shanghai Stock Exchange: Stocks	China	5	SA
153	SPR19	2001M1-2016M6	Turnover: Volume: Shenzhen Stock Exchange: Stocks	China	4	SA
154	SPR20	2001M1-2016M6	Turnover: Value: Shenzhen Stock Exchange: Stocks	China	5	SA
155	SPR21	2001M1-2016M6	Insurance Companies - Total Assets	China	5	SA
156	SPR22	2001M1-2016M6	Insurance Companies - Bank Deposit	China	4	NSA
157	CPICN1	2001M1-2016M6	Consumer Price Index: Food, Tobacco & Liquor: Food	China	5	NSA
158	CPICN2	2001M1-2016M6	Consumer Price Index: Food, Tobacco & Liquor: Grain	China	5	SA
159	CPICN3	2001M1-2016M6	Consumer Price Index: Food, Tobacco & Liquor: Meat and Poultry	China	5	NSA
160	CPICN4	2001M1-2016M6	Consumer Price Index: Food, Tobacco & Liquor: Eggs	China	5	NSA
161	CPICN5	2001M1-2016M6	Consumer Price Index: Food, Tobacco & Liquor: Aquatic Products	China	5	NSA

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No.	Series	Period	Detail	Region	Code	Seasonal Adj.
162	CPICN6	2001M1-2016M6	Consumer Price Index: Food, Tobacco & Liquor: Fresh Vegetables	China	5	SA
163	CPICN7	2001M1-2016M6	Consumer Price Index: Clothing	China	5	NSA
164	CPICN8	2001M1-2016M6	Consumer Price Index: Transportation & Communication	China	5	NSA
165	CPICN9	2001M1-2016M6	Consumer Price Index: Residence	China	5	NSA
166	CPICN10	2001M1-2016M6	Consumer Price Index: Urban	China	5	NSA
167	CPICN11	2001M1-2016M6	Consumer Price Index: Urban: Food: Grain	China	5	NSA
168	CPICN12	2001M1-2016M6	Consumer Price Index: Urban: Food: Meat and Poultry	China	5	NSA
169	CPICN13	2001M1-2016M6	Consumer Price Index: Urban: Food: Eggs	China	5	NSA
170	CPICN14	2001M1-2016M6	Consumer Price Index: Urban: Food: Aquatic Products	China	5	NSA
171	CPICN15	2001M1-2016M6	Consumer Price Index: Urban: Food: Fresh Vegetables	China	5	NSA
172	CPICN16	2001M1-2016M6	Consumer Price Index: Urban: Clothing	China	5	NSA
173	CPICN17	2001M1-2016M6	Consumer Price Index: Urban: Transport & Telecom	China	5	NSA
174	CPICN18	2001M1-2016M6	Consumer Price Index: Urban: Residence	China	5	NSA
175	CPICN19	2001M1-2016M6	Consumer Price Index: Rural	China	5	NSA
176	CPICN20	2001M1-2016M6	Consumer Price Index: Rural: Food: Grain	China	5	NSA
177	CPICN21	2001M1-2016M6	Consumer Price Index: Rural: Food: Meat and Poultry	China	5	NSA
178	CPICN22	2001M1-2016M6	Consumer Price Index: Rural: Food: Eggs	China	5	NSA
179	CPICN23	2001M1-2016M6	Consumer Price Index: Rural: Food: Aquatic Products	China	5	NSA
180	CPICN24	2001M1-2016M6	Consumer Price Index: Rural: Food: Fresh Vegetables	China	5	NSA
181	CPICN25	2001M1-2016M6	Consumer Price Index: Rural: Clothing	China	5	NSA
182	CPICN26	2001M1-2016M6	Consumer Price Index: Rural: Transport & Telecom	China	5	NSA

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No.	Series	Period	Detail	Region	Code	Seasonal Adj.
183	CPICN27	2001M1-2016M6	Consumer Price Index: Rural: Residence	China	5	NSA
184	PPICN1	2001M1-2016M6	PPI: IP: Producer Goods	China	5	SA
185	PPICN2	2001M1-2016M6	PPI: IP: Producer Goods: Excavation	China	5	NSA
186	PPICN3	2001M1-2016M6	PPI: IP: Producer Goods: Raw Material	China	5	NSA
187	PPICN4	2001M1-2016M6	PPI: IP: Producer Goods: Manufacturing	China	5	NSA
188	PPICN5	2001M1-2016M6	PPI: IP: Consumer Goods	China	5	NSA
189	PPICN6	2001M1-2016M6	PPI: IP: Consumer Goods: Food	China	5	NSA
190	PPICN7	2001M1-2016M6	PPI: IP: Consumer Goods: Clothing	China	5	NSA
191	PPICN8	2001M1-2016M6	PPI: IP: Consumer Goods: Daily Use Articles	China	5	NSA
192	PPICN9	2001M1-2016M6	PPI: IP: Consumer Goods: Durable	China	5	NSA
193	PPICN10	2001M1-2016M6	PPI: Industrial Pdts: Coal Mining & Dressing	China	5	NSA
194	PPICN11	2001M1-2016M6	PPI: Industrial Pdts: Petroleum & Natural Gas Extraction	China	5	NSA
195	PPICN12	2001M1-2016M6	PPI: Industrial Pdts: Ferrous Metals Mining & Dressing	China	5	NSA
196	PPICN13	2001M1-2016M6	PPI: Industrial Pdts: Non Ferrous Metals Mining & Dressing	China	5	NSA
197	PPICN14	2001M1-2016M6	PPI: Industrial Pdts: Non-Metal Minerals Mining & Dressing	China	5	NSA
198	PPICN15	2001M1-2016M6	PPI: Industrial Pdts: Food Manufacturing	China	5	NSA
199	PPICN16	2001M1-2016M6	PPI: Industrial Pdts: Beverage Manufacturing	China	5	NSA
200	PPICN17	2001M1-2016M6	PPI: Industrial Pdts: Tobacco Processing	China	5	NSA
201	PPICN18	2001M1-2016M6	PPI: Industrial Pdts: Textile Industry	China	5	NSA

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No.	Series	Period	Detail	Region	Code	Seasonal Adj.
202	PPICN19	2001M1-2016M6	PPI: Industrial Pdts: Timber Processing, Bamboo, Cane. Palm Fibre	China	5	NSA
203	PPICN20	2001M1-2016M6	PPI: Industrial Pdts: Furniture Manufacturing	China	5	NSA
204	PPICN21	2001M1-2016M6	PPI: Industrial Pdts: Paper Making & Paper Products	China	5	NSA
205	PPICN22	2001M1-2016M6	PPI: Industrial Pdts: Printing & Record Medium Reproduction	China	5	NSA
206	PPICN23	2001M1-2016M6	PPI: Industrial Pdts: Coking & Nuclear Fuel & Petroleum Processing	China	5	NSA
207	PPICN24	2001M1-2016M6	PPI: Industrial Pdts: Raw Chemical Materials & Chemical Products	China	5	NSA
208	PPICN25	2001M1-2016M6	PPI: Industrial Pdts: Medical & Pharmaceutical Products	China	5	NSA
209	PPICN26	2001M1-2016M6	PPI: Industrial Pdts: Chemical Fiber Industry	China	5	SA
210	PPICN27	2001M1-2016M6	PPI: Industrial Pdts: Non-Metal Minerals Products	China	5	NSA
211	PPICN28	2001M1-2016M6	PPI: Industrial Pdts: Smelting & Pressing of Ferrous Metals	China	5	NSA
212	PPICN29	2001M1-2016M6	PPI: Industrial Pdts: Smelting & Pressing of Non-Ferrous Metals	China	5	NSA
213	PPICN30	2001M1-2016M6	PPI: Industrial Pdts: Metal Products	China	5	NSA
214	PPICN31	2001M1-2016M6	PPI: Industrial Pdts: Universal Equipment Manufacturing	China	5	NSA
215	PPICN32	2001M1-2016M6	PPI: Industrial Pdts: Special Purpose Equipment	China	5	NSA
216	PPICN33	2001M1-2016M6	PPI: Industrial Pdts: Electric Machinery & Equipment	China	5	NSA
217	PPICN34	2001M1-2016M6	PPI: Industrial Pdts: Communication, Computer & Other Electronic Eq	China	5	NSA

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No.	Series	Period	Detail	Region	Code	Seasonal Adj.
218	PPICN35	2001M1-2016M6	PPI: Industrial Pdts: Electroicty Supply & Production, Heating Power	China	5	NSA
219	PPICN36	2001M1-2016M6	PPI: Industrial Pdts: Gas Production & Supply	China	5	NSA
220	PPICN37	2001M1-2016M6	PPI: Industrial Pdts: Water Production & Supply	China	5	NSA
221	PPICN38	2001M1-2016M6	PPI: Agricultural Input	China	5	NSA
222	RPICN1	2001M1-2016M6	Retail Price Index: Food	China	5	NSA
223	RPICN2	2001M1-2016M6	Retail Price Index: Beverage, Tobacco and Liquors	China	5	NSA
224	RPICN3	2001M1-2016M6	Retail Price Index: Garments, Footwear and Headgear	China	5	NSA
225	RPICN4	2001M1-2016M6	Retail Price Index: Textiles	China	5	NSA
226	RPICN5	2001M1-2016M6	Retail Price Index: Medicines, Medical & Health Care Articles	China	5	NSA
227	RPICN6	2001M1-2016M6	Retail Price Index: Cosmetics	China	5	NSA
228	RPICN7	2001M1-2016M6	Retail Price Index: Book, Newspaper, Magazine & Electronic Pub	China	5	NSA
229	RPICN8	2001M1-2016M6	Retail Price Index: Daily Use Articles	China	5	NSA
230	RPICN9	2001M1-2016M6	Retail Price Index: Household Electric App & Audiovisual Apparatus	China	5	NSA
231	RPICN10	2001M1-2016M6	Retail Price Index: Gold, Silver & Jewellery	China	5	NSA
232	RPICN11	2001M1-2016M6	Retail Price Index: Fuels	China	5	NSA
233	RPICN12	2001M1-2016M6	Retail Price Index: Buildings, Hardware & Electric Materials	China	5	NSA
234	RPICN13	2001M1-2016M6	Retail Price Index:Urban	China	5	NSA
235	RPICN14	2001M1-2016M6	Retail Price Index: Urban: Food	China	5	NSA
236	RPICN15	2001M1-2016M6	Retail Price Index: Urban: Beverage, Tobacco and Liquors	China	5	NSA
237	RPICN16	2001M1-2016M6	Retail Price Index: Urban: Garments, Footwear and Headgear	China	5	NSA

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No.	Series	Period	Detail	Region	Code	Seasonal Adj.
238	RPICN17	2001M1-2016M6	Retail Price Index: Urban: Textiles	China	5	NSA
239	RPICN18	2001M1-2016M6	Retail Price Index: Urban: Medicines, Medical & Health Care Article	China	5	NSA
240	RPICN19	2001M1-2016M6	Retail Price Index: Urban: Cosmetics	China	5	NSA
241	RPICN20	2001M1-2016M6	Retail Price Index: Urban: Book, Newspaper, Magazine & ElectronicPub	China	5	NSA
242	RPICN21	2001M1-2016M6	Retail Price Index: Urban: Daily Use Articles	China	5	NSA
243	RPICN22	2001M1-2016M6	Retail Price Index: Urban: Household Electric & Audiovisual Apparatu	China	5	NSA
244	RPICN23	2001M1-2016M6	Retail Price Index: Urban: Gold, Silver & Jewellery	China	5	NSA
245	RPICN24	2001M1-2016M6	Retail Price Index: Urban: Fuels	China	5	NSA
246	RPICN25	2001M1-2016M6	Retail Price Index: Urban: Buildings, Hardware & Electric Materials	China	5	NSA
247	RPICN26	2001M1-2016M6	Retail Price Index: Rural	China	5	NSA
248	RPICN27	2001M1-2016M6	Retail Price Index: Rural: Food	China	5	NSA
249	RPICN28	2001M1-2016M6	Retail Price Index: Rural: Beverage, Tobacco and Liquors	China	5	NSA
250	RPICN29	2001M1-2016M6	Retail Price Index: Rural: Garments, Footwear and Headgear	China	5	NSA
251	RPICN30	2001M1-2016M6	Retail Price Index: Rural: Textiles	China	5	NSA
252	RPICN31	2001M1-2016M6	Retail Price Index: Rural: Medicines, Medical & Health Care Article	China	5	NSA
253	RPICN32	2001M1-2016M6	Retail Price Index: Rural: Cosmetics	China	5	NSA
254	RPICN33	2001M1-2016M6	Retail Price Index: Rural: Book, Newspaper, Magazine & ElectronicPub	China	5	NSA

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No.	Series	Period	Detail	Region	Code	Seasonal Adj.
255	RPICN34	2001M1-2016M6	Retail Price Index: Rural: Daily Use Articles	China	5	NSA
256	RPICN35	2001M1-2016M6	Retail Price Index: Rural: Household Electric & Audiovisual App	China	5	NSA
257	RPICN36	2001M1-2016M6	Retail Price Index: Rural: Gold, Silver & Jewellery	China	5	SA
258	RPICN37	2001M1-2016M6	Retail Price Index: Rural: Fuels	China	5	NSA
259	RPICN38	2001M1-2016M6	Retail Price Index: Rural: Buildings, Hardware & Electric Materials	China	5	NSA

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