THE IMPACT OF TELEVISION NEWS COVERAGE OF RISING AND FALLING PRICES ON FOOD, GAS, AND RENT PRICE CHANGE EXPECTATIONS IN THE UNITED STATES

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This paper examines whether and how television news coverage of rising and falling prices affects US households' expectations of food, gas, and rent price changes. Using vector autoregressions and data from June 2013 to October 2024, we find that a sudden and unexpected increase in television news coverage of rising prices on CNN and Fox News leads to a statistically significant decrease in food and gas price change expectations, while the impact on rent price change expectations is statistically insignificant. In contrast, increased television news coverage of falling prices has no statistically significant impact on commodity price change expectations. These findings have important policy implications, as they indicate that the impact of media coverage of rising and falling prices on price change expectations is limited to food and gas, and depends on the content of the news. One possible explanation is that increased media coverage of rising prices signals a tightening of monetary policy, prompting households to revise their short-term price change expectations. To this end, we use the GDELT Project to measure television news coverage, as well as vector autoregression and impulse response analysis.

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1 Introduction

In recent years, inflation has been a hot topic in the news media. Geopolitical events, such as the war in Ukraine (since 2014, with escalation in 2022), the war in Gaza (since 2023), and the war in Iran (since 2026), have increased the risk of inflation and fuelled speculation about its future level. These events have disrupted the production and transport of commodities, contributing to rising prices of goods such as food and gas, as observed in the past (Caldara et al., 2026; Yang et al., 2023; Zhou, 2025). The risk of inflation has also increased due to the tariff war (since 2025) (Dvorkin et al., 2025; Hacıoğlu-Hoke et al., 2026; Halbersleben et al., 2026; Hobijn & Nechio, 2025; Minton & Somale, 2025).

In 2020, following the outbreak of the COVID-19 epidemic in the United States, inflation began to make headlines in the news media (Macaulay & Song, 2023). Initially, the risk of deflation outweighed that of inflation (Christensen et al., 2020; Hajdini et al., 2025). However, as the economy recovered in 2021 and 2022, inflation soon began to show its teeth, putting pressure on the Federal Reserve to raise the policy rate (Blanchard & Bernanke, 2023; de Soyres et al., 2026; Lebow & Peneva, 2024). In 2022, inflation in the United States peaked at 8 per cent, the highest since the Great Inflation (Binder & Kamdar, 2022; Hajdini et al., 2025).

Research (Mehra & Herrington, 2008) shows that a sudden and unexpected increase in inflation raises inflation expectations. Evidence (Barrales-Ruiz et al., 2026; Moessner, 2024) also shows that a sudden and unexpected increase in inflation expectations raises inflation, suggesting that inflation and inflation expectations reinforce each other. In addition, inflation expectations affect the effectiveness of fiscal and monetary policy (D'Acunto et al., 2023; Weber et al., 2022). Therefore, the Federal Reserve should manage both. To achieve this, the central bank should monitor news on inflation, as media coverage of inflation affects households' expectations (Bauer, 2015; Binder et al., 2024, 2025; Chahrour et al., 2025; Pfajfar & Santoro, 2013; Kmetz et al., 2022; Larsen et al., 2021; Lei et al., 2015). To address a gap in the literature, this chapter examines whether and how television news coverage of rising and falling prices affects US households' expectations of food, gas, and rent price changes.

The novelty of this chapter lies in its focus on the impact of television news coverage of prices on US households' expectations of commodity price changes, distinguishing between news about rising prices and news about falling prices.

2 Literature review

Inflation expectations are a major concern for policymakers, as they influence the decisions of economic agents and, consequently, affect inflation and other macroeconomic outcomes (Weber et al., 2022; D'Acunto et al., 2023). The media is considered a primary source of news for households (Larsen et al., 2021; Binder et al., 2025) and therefore plays an important role in shaping inflation expectations and inflation dynamics. Central banks also acknowledge the relevance of media reporting in monetary policy strategy and inflation expectation management (see Assenmacher et al., 2021).

Recent research highlights the impact of media inflation reporting on household inflation expectations. Lamla and Lein (2014) model household inflation expectations and show that their accuracy (defined as the gap between actual inflation and expectations) depends on both the extent and tone of reporting. Using data from Germany, they find that increased reporting improves accuracy, whereas a negative tone reduces it. Binder et al. (2025) analyse daily inflation news coverage from three cable television news outlets and show that coverage increases on inflation data release days. The extent of coverage is positively related to inflation surprises (defined as actual inflation exceeding professional forecasts), with more coverage observed in response to positive than negative surprises. They further find that media inflation coverage shocks increase household inflation expectations in the short term (up to 10 days after the shock).

Chahrour et al. (2025) theoretically and empirically examine the asymmetric response of US households' inflation expectations to media inflation news, using the University of Michigan Survey of Consumers (UMSC). Their results show that only unfavourable news, such as reports of price increases, leads to higher inflation expectations. Larsen et al. (2021), using the Dow Jones Newswire archive and natural language processing techniques, identify key media topics relevant to US household inflation expectations and realised inflation, including education, trading, health, internet, the White House, and transactions. They also demonstrate that the weight households assign to news changes over time, with the strongest information rigidities observed during the Great Recession, while increased media coverage reduces these rigidities.

Kmetz et al. (2022) document that the gap between inflation expectations of professional forecasters and households in the United States widened after the pandemic, attributing this to increased coverage and a more negative tone in inflation-related media reporting. Bolliger (2025) studies Swiss households and analyses inflation reporting in Swiss newspapers. He constructs a news measure based on the difference between positive and negative mentions of inflation (increases versus decreases) and finds that higher news intensity is associated with higher inflation expectations, particularly during periods of rising inflation and especially in the German-speaking part of Switzerland. He also finds that newspapers tend to assign similar weight to reports of inflation increases and decreases.

Xu et al. (2018) develop a theoretical model showing how both the quantity and bias of media inflation reporting affect inflation expectations, with bias exerting a stronger influence than reporting volume. Their model is empirically validated using Chinese data. Xu et al. (2024) further examine the role of television news in China and, using time-varying Granger causality tests, show that media inflation coverage can predict inflation expectations; however, inflation expectations also Granger-cause television inflation reporting in certain periods.

3 Methodology

3.1 Vector autoregression model specification

The empirical approach involves estimating a reduced-form vector autoregression (VAR) model and orthogonalized impulse response functions (OIRFs). The study distinguishes three types of commodity price change expectations; accordingly, three groups of VAR models were estimated to analyse the impact of television news coverage of rising and falling prices on food, gas, and rent price change expectations. The analysis further differentiates the effects of coverage of rising and falling prices. Thus, altogether six VAR models were estimated for each television network. The study focuses on two television channels, CNN and Fox News, resulting in a total of twelve VAR models.

The optimal lag length was determined using the Hannan–Quinn information criterion (HQIC). According to this criterion, two lags were selected as optimal for all estimated VAR models (see Appendix). The stability of the VAR models was also assessed; the corresponding eigenvalues indicate that all models are stable (see Appendix).

The study covers the period from June 2013 to October 2024. The VAR models include the following variables: median one-year-ahead inflation uncertainty (infunc), commodity price change expectations, the natural logarithm of the industrial production index (ln_ip), the unemployment rate (ur), the first difference of the natural logarithm of the consumer price index (dln_cpi), television news coverage of rising and falling prices, and the federal funds effective rate (ffer). Food, gas, and rent price change expectations are included separately in the VAR specifications.

Television news coverage variables are specified separately, including coverage of rising prices by CNN (cnn_up) and Fox News (fox_up), as well as coverage of falling prices by CNN (cnn_down) and Fox News (fox_down). The variables are ordered in the VAR models as listed above. This ordering follows established empirical practice, with inflation uncertainty and inflation expectations placed first, followed by standard macroeconomic variables used to identify shocks (Bassett et al., 2014; Baker et al., 2016). Structural shocks are identified using a Cholesky decomposition of the covariance matrix of the reduced-form residuals. Table 1 provides detailed descriptions of all variables used in the analysis.

Table 1: Variable descriptions

Variable	Description	Source
infunc	Difference between the 90th and 10th percentiles of the redistribution of inflation-at-risk	Federal Reserve Bank of New York (2025a)
food	Food price change expectations, median one-year ahead point prediction	Federal Reserve Bank of New York (2025b)
gas	Gas price change expectations, median one-year ahead point prediction	Federal Reserve Bank of New York (2025c)

Variable	Description	Source
rent	Rent price change expectations, median one-year ahead point prediction	Federal Reserve Bank of New York (2025d)
ln_ip	Industrial Production: Total Index, index 2017 = 100, monthly, not seasonally adjusted	Board of Governors of the Federal Reserve System (2025a)
ur	Unemployment rate, percent, monthly, seasonally adjusted	U.S. Bureau of Labor Statistics (2025a)
dln_cpi	Consumer Price Index for All Urban Consumers: All Items in U.S. City Average, index 1982–1984 = 100, monthly, seasonally adjusted	U.S. Bureau of Labor Statistics (2025b)
cnn_up	(price OR prices) AND (climb OR climbed OR climbs OR climbing OR grow OR grew OR grown OR grows OR growing OR increase OR increased OR increases OR increasing OR jump OR jumped OR jumps OR jumping OR rise OR rose OR risen OR rises OR rising OR soar OR soared OR soars OR soaring OR spike OR spiked OR spikes OR spiking OR surge OR surged OR surges OR surging) AND (Station:CNN)	GDELT Project (2025)
cnn_down	(price OR prices) AND (decline OR declined OR declines OR declining OR decrease OR decreased OR decreases OR decreasing OR drop OR dropped OR drops OR dropping OR fall OR fell OR fallen OR falls OR falling OR plunge OR plunged OR plunges OR plunging OR reduce OR reduced OR reduces OR reducing OR shrink OR shrank OR shrunk OR shrinks OR shrinking OR sink OR sank OR sunk OR sinks OR sinking OR slide OR slid OR slides OR sliding OR slump OR slumped OR slumps OR slumping) AND (Station:CNN)	GDELT Project (2025)
fox_up	(price OR prices) AND (climb OR climbed OR climbs OR climbing OR grow OR grew OR grown OR grows OR growing OR increase OR increased OR increases OR increasing OR jump OR jumped OR jumps OR jumping OR rise OR rose OR risen OR rises OR rising OR soar OR soared OR soars OR soaring OR spike OR spiked OR spikes OR spiking OR surge OR surged OR surges OR surging) AND (Station:FOXNEWS)	GDELT Project (2025)
fox_down	(price OR prices) AND (decline OR declined OR declines OR declining OR decrease OR decreased OR decreases OR decreasing OR drop OR dropped OR drops OR dropping OR fall OR fell OR fallen OR falls OR falling OR plunge OR plunged OR plunges OR plunging OR reduce OR reduced OR reduces OR reducing OR shrink OR shrank OR shrunk OR	GDELT Project (2025)

Variable	Description	Source
	shrinks OR shrinking OR sink OR sank OR sunk OR sinks OR sinking OR slide OR slid OR slides OR sliding OR slump OR slumped OR slumps OR slumping) AND (Station:FOXNEWS)	
ffer	Federal Funds Effective Rate, per cent, monthly, not seasonally adjusted	Board of Governors of the Federal Reserve System (2025b)

3.2 Operationalising lexical variables for directionality in price movement

For our analysis, we operationalised two groups of lexical variables: cnn_up and fox_up for Television news coverage of upward price movement (Group 1), and cnn_down and fox_down for Television news coverage of downward price movement (Group 2), using the GDELT Project (2025). Group 1 comprises upward movement verbs, and Group 2 comprises downward movement verbs. The verbs were selected as the unit of analysis, alongside the nouns *price* and *prices*, because they linguistically express changes and the direction of these changes.

Group 1 comprised verbs expressing upward movement, i.e. *climb, grow, increase, jump, rise, soar, spike,* and *surge* in all possible forms (i.e. climb OR climbed OR climbs OR climbing OR grow OR grew OR grown OR grows OR growing OR increase OR increased OR increases OR increasing OR jump OR jumped OR jumps OR jumping OR rise OR rose OR risen OR rises OR rising OR soar OR soared OR soars OR soaring OR spike OR spiked OR spikes OR spiking OR surge OR surged OR surges OR surging).

Regarding their meaning, we can rank these verbs according to their intensity as follows:

(1) verbs expressing general, mild or moderate upward movement, i.e. *increase*, *grow*, *rise* and *climb*. This group consists of verbs which denote a somewhat neutral upward quantitative change of a given phenomenon. That is, *increase* and *rise* are the most neutral verbs for describing upward movement (e.g. in amount, number, value), without implying the intensity or rate. The verbs *grow* and *climb* both suggest gradual, steady and sustained (organic) progressive development over a given period of time (e.g. of prices, costs, inflation).

(2) verbs expressing strong or sharp upward movement, i.e. *jump* and *surge*. Both these verbs describe significant and sudden upward change, which is stronger than moderate, where jump points to a distinct and somewhat abrupt and noticeable upward movement, and *surge* shows intensity by implying force, momentum, dynamic acceleration (e.g. after a period of stability or slow growth).

(3) verbs expressing severe or dramatic upward movement, i.e. *spike* and *soar*. While both verbs denote the highest degree of intensity of upward change, *spike* is typically used for describing a sharp and short-lived or unstable peak in something (e.g. oil prices, gas prices, interest rates); on the other hand, *soar* stresses a more sustained and expansive rise to very high levels rather than a temporary phenomenon.

Group 2 comprised verbs expressing downward movement, i.e. *decline*, *decrease*, *drop*, *fall*, *plunge*, *reduce*, *shrink*, *sink*, *slide*, and *slump* in all possible forms (i.e. decline OR declined OR declines OR declining OR decrease OR decreased OR decreases OR decreasing OR drop OR dropped OR drops OR dropping OR fall OR fell OR fallen OR falls OR falling OR plunge OR plunged OR plunges OR plunging OR reduce OR reduced OR reduces OR reducing OR shrink OR shrank OR shrunk OR shrinks OR shrinking OR sink OR sank OR sunk OR sinks OR sinking OR slide OR slid OR slides OR sliding OR slump OR slumped OR slumps OR slumping).

Regarding their meaning, we can rank these verbs according to their intensity as follows:

(1) verbs expressing general (neutral), mild or moderate downward movement, i.e. *decrease*, *reduce*, *decline*, *fall*, *drop*, *sink*, and *slide*. These verbs thus express downward quantitative change (e.g. of size, amount, level, degree of something). Specifically, *decrease* and *fall* are rather neutral, descriptive verbs used to denote a gradual and non-evaluative downward movement, whereas reduce somehow implies a deliberate action (e.g. 'A company has reduced its prices'). All other verbs in this category describe a moderate downward movement, with slight differences in meaning. *Drop* points to a more sudden movement, whereas decline shows a gradual weakening or deterioration over time. On the other hand, *sink* suggests a slower and steadier movement to a lower level (e.g. of prices, profits, shares), while *slide* suggests a gradual and longer worsening or lowering of a given phenomenon. Both of these verbs carry a rather negative evaluative tone.

(2) verbs expressing strong or sharp downward movement, i.e. *shrink* and *slump*. Both verbs are used to discuss a more pronounced downward movement related to a given phenomenon. Specifically, *shrink* means a noticeable reduction (e.g. in size, extent, scale) that unfolds progressively, while *slump* expresses a sudden and substantial downturn (e.g. in economic activity).

(3) verbs expressing a severe or dramatic downward movement, i.e. *plunge* and *plummet*. These two verbs are associated with the highest degree of downward movement (as regards intensity) as they both express a sudden and steep decline, with *plummet* expressing an extreme, almost vertical fall, which is uncontrolled and dramatic.

4 Results

This section presents the results of the OIRF analyses. We examine the responses of the variables included in the VAR models to a sudden and unexpected increase in television news coverage of both rising and falling prices. The analysis incorporates three types of commodity price change expectations, allowing us to distinguish between the effects of shocks to coverage of rising and falling prices. We also differentiate between television news coverage from two networks, CNN and Fox News. In total, twelve VAR models are analysed.

In the reported OIRFs, the left-hand panels show the responses of each variable to a shock in television news coverage of rising prices by CNN and Fox News, while the right-hand panels show the responses to a shock in coverage of falling prices. In each panel, we combine two OIRFs: one for CNN and one for FOX News.

4.1 Food prices

Firstly, we analyse a set of OIRFs that include food prices in the variable specification. Figure 1 shows the responses to a one-standard-deviation shock in television news coverage of rising or falling prices over a 60-month horizon, with 68% confidence intervals.

A shock to television news coverage of rising prices leads to a negative response in the CPI growth; however, the impact is initially insignificant and becomes significant in the medium term. In contrast, a shock to coverage of falling prices produces a significant negative response in the CPI growth, which dissipates quickly and becomes insignificant in the medium term.

Shocks to television news coverage of both rising and falling prices lead to a significant increase in the federal funds effective rate. The impact dissipates more quickly after shocks to coverage of rising prices than after shocks to coverage of falling prices.

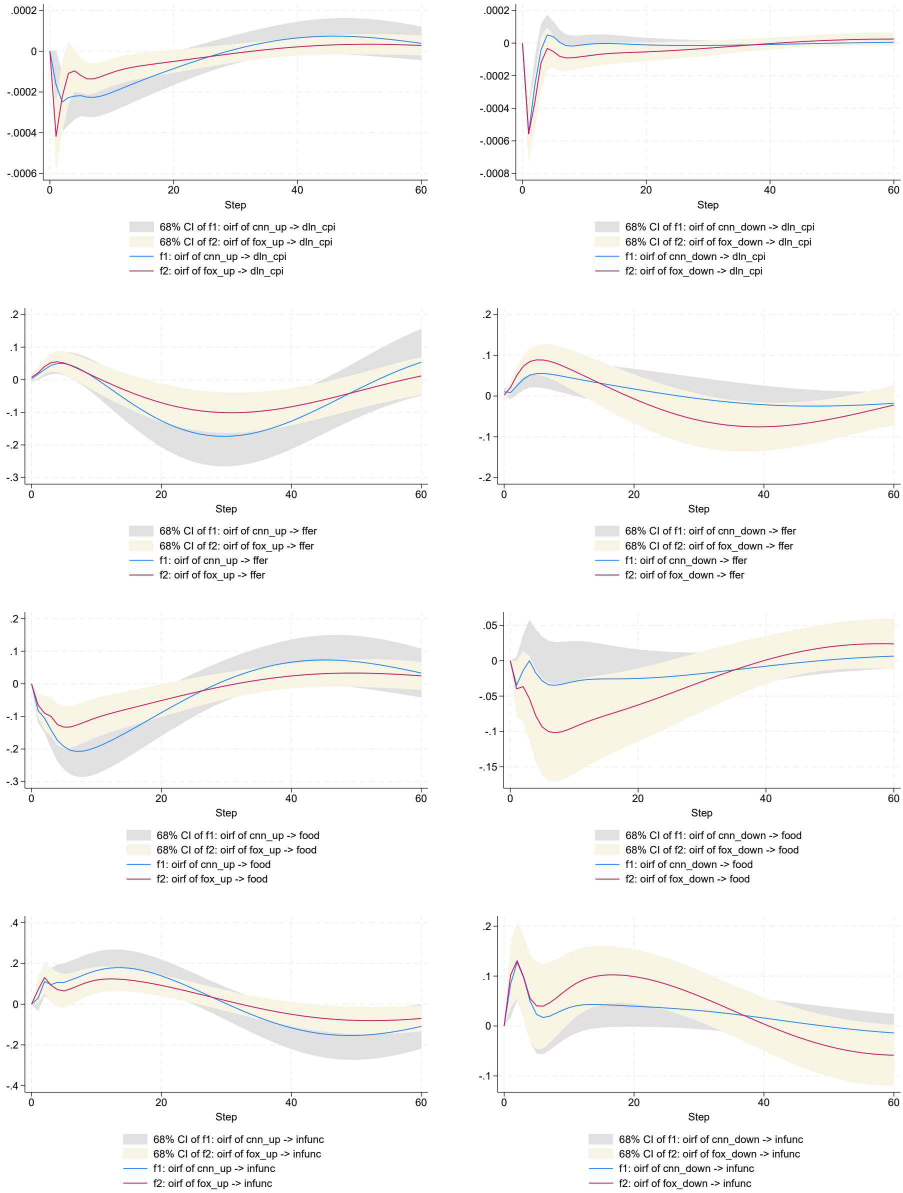
The OIRFs indicate that food price change expectations respond differently to coverage of rising and falling prices. A shock to coverage of rising prices has a negative and statistically significant impact in both the short and medium term. In contrast, a shock to coverage of falling prices has no statistically significant impact.

A shock to television news coverage of rising prices produces a positive response in inflation uncertainty, which is initially insignificant but becomes significant in the medium term. Conversely, a shock to coverage of falling prices leads to a significant negative response in inflation uncertainty, but only in the short term.

The response of industrial production to shocks in television news coverage is mixed. A shock to coverage of rising prices leads to an initially insignificant negative response, which becomes significant in the medium term. Similarly, a shock to coverage of falling prices causes an initially insignificant negative response, followed by a brief significant decline, with significance re-emerging in the medium term.

Increased television news coverage of both rising and falling prices has insignificant effects on the unemployment rate in the short term. However, a shock to coverage of rising prices leads to a significant positive response in unemployment in the medium term, while the response to coverage of falling prices remains insignificant.

An increase in television news coverage of rising and falling prices leads to a significant increase in inflation reporting, which dissipates in the short term.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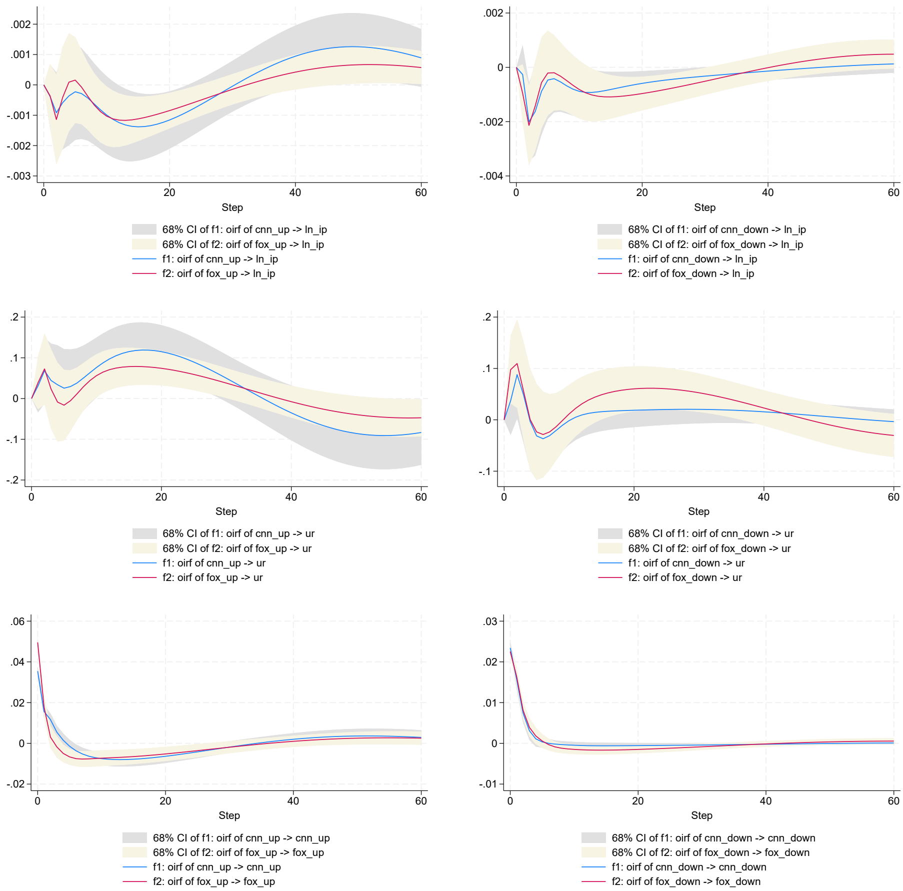


Figure 1: OIRFs for food prices

Source: own.

4.2 Gas prices

Secondly, we revise the specification of variables in the VAR models by replacing food prices with gas prices. Figure 2 presents the second set of OIRFs, illustrating the responses to a one-standard-deviation shock in television news coverage of rising or falling prices over a 60-month horizon, with 68% confidence intervals.

A shock to television news coverage of rising prices has an indeterminate and insignificant impact on CPI growth. In contrast, a shock to coverage of falling prices leads to a negative and significant response in CPI growth immediately after the shock. This response is short-lived, as it is followed by a brief positive and significant impact on CPI in the medium term.

A shock to television news coverage of rising or falling prices leads to an increase in the federal funds effective rate. The initial response is insignificant in both cases but becomes significant in the short and medium term, with slight differences in magnitude and persistence between the two shocks.

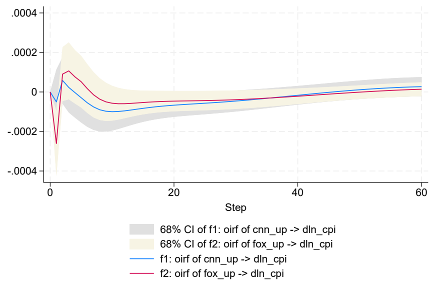
A shock to television news coverage of rising prices produces an immediate, negative, and significant response in gas price change expectations; however, this impact becomes insignificant shortly after the shock. Negative effects reappear in the medium term. In contrast, a shock to coverage of falling prices has an indeterminate and insignificant impact on gas price change expectations.

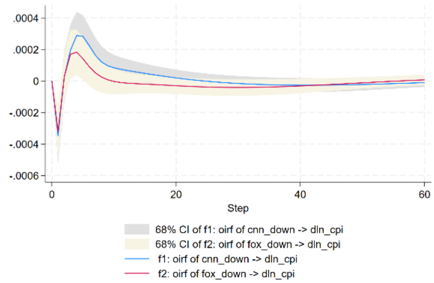
The OIRFs show that inflation uncertainty increases in response to shocks in television news coverage of both rising and falling prices. In both cases, the response is significant in the short term, with minor differences in magnitude and persistence before dissipating. A shock to coverage of falling prices produces a slightly stronger response than a shock to coverage of rising prices. Additionally, a shock to coverage of rising prices leads to a significant increase in inflation uncertainty in the medium term.

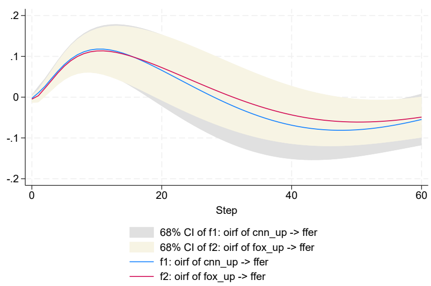
Industrial production decreases in response to shocks in television news coverage of rising and falling prices. These responses are initially insignificant but become significant for a brief period in the short term. In the medium term, small but significant negative impacts persist following both types of shocks.

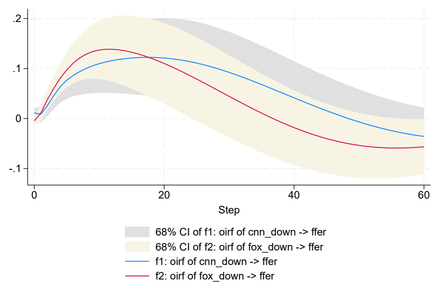
A shock to television news coverage of rising and falling prices leads to an increase in the unemployment rate. The initial response is insignificant, but it becomes significant for a brief period in the short term. A shock to coverage of rising prices also produces a significant positive effect on unemployment in the medium to long term, whereas the response to coverage of falling prices remains insignificant.

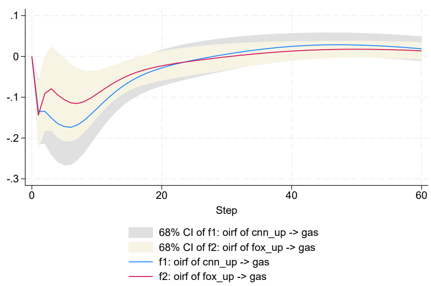
Finally, a shock to television news coverage of rising and falling prices leads to a significant short-term increase in overall price-related news coverage. This response is immediate and dissipates rapidly.

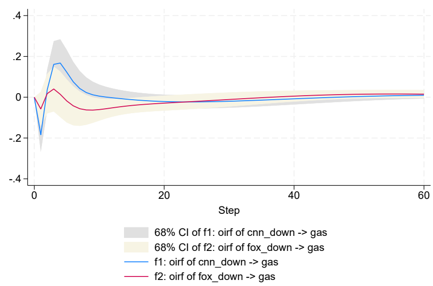


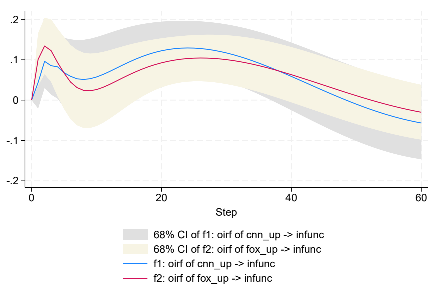


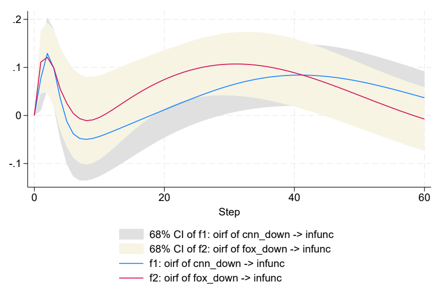












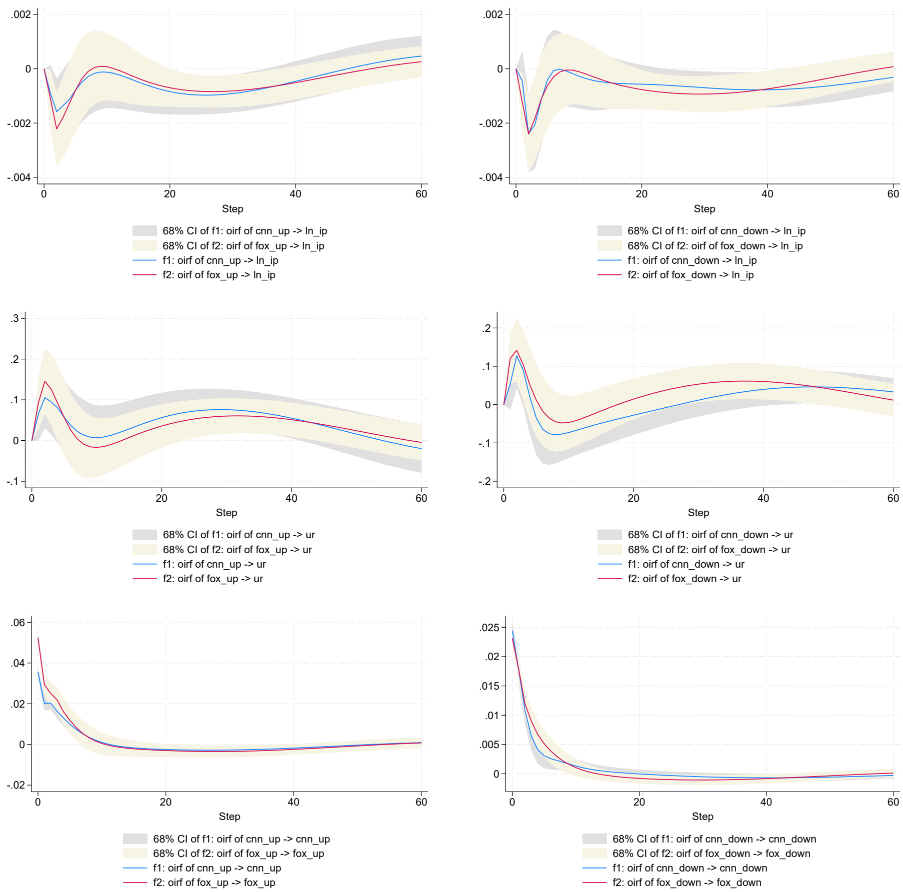


Figure 2: OIRFs for gas prices

Source: own.

4.3 Rent prices

Lastly, we analyse the set of VAR models in which rent prices are included as the commodity price change expectation variable. Figure 3 presents the OIRFs for shocks to television news coverage of rising and falling prices. We apply a one-standard-deviation shock and observe the responses of the variables in the VAR models over a 60-month horizon, with 68% confidence intervals.

A shock to television news coverage of rising prices has a negative impact on CPI growth; however, this impact is insignificant in the short term and remains insignificant throughout the horizon. By contrast, a shock to coverage of falling prices leads to a significant negative impact on CPI growth on impact, which dissipates shortly after the shock.

A shock to television news coverage of both rising and falling prices has a positive impact on the federal funds effective rate in the short term. The response is initially insignificant, becomes significant over the remainder of the short-term horizon, and then dissipates.

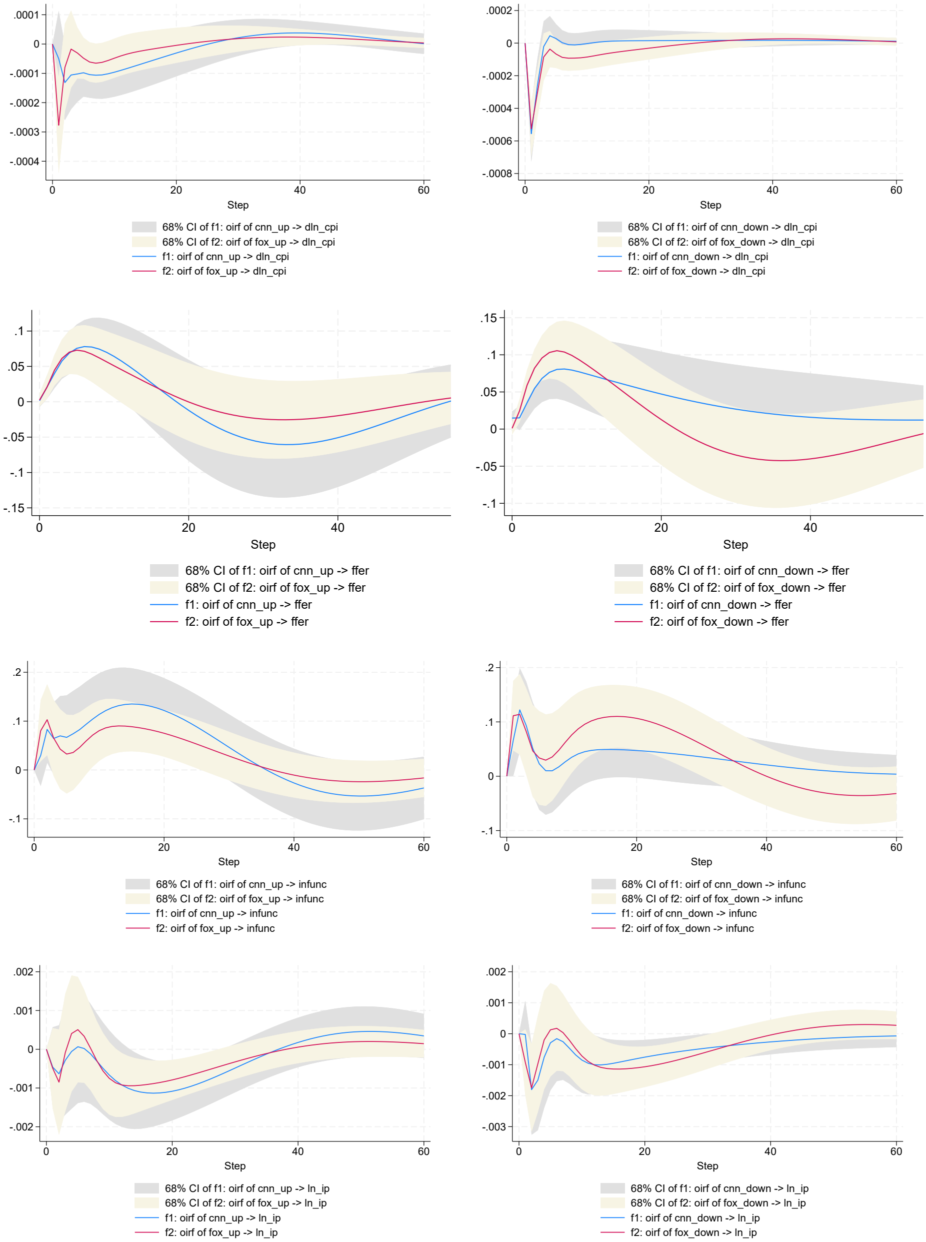
Inflation uncertainty responds differently to shocks in television news coverage of rising and falling prices. A shock to coverage of rising prices has a positive impact on inflation uncertainty, which is significant only in the medium term. In contrast, a shock to coverage of falling prices produces a positive and significant impact on inflation uncertainty in the short term.

Shocks to television news coverage of both rising and falling prices have a negative and significant impact on industrial production in the medium term. Although the responses are similar for both types of coverage, they differ slightly in magnitude and persistence.

As shown in Figure 3, a shock to television news coverage of rising and falling prices has an indeterminate and insignificant impact on rent price change expectations.

The unemployment rate rises in response to a shock in television news coverage of rising prices; however, this impact is only significant in the medium term. In contrast, a shock to coverage of falling prices has an indeterminate and insignificant impact on the unemployment rate.

Finally, a shock to television news coverage of both rising and falling prices has a positive and significant impact on the coverage variable itself in the short term.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Step
68% CI of f1: oirf of cnn_down -> ln_ip
68% CI of f2: oirf of fox_down -> ln_ip
f1: oirf of cnn_down -> ln_ip
f2: oirf of fox_down -> ln_ip

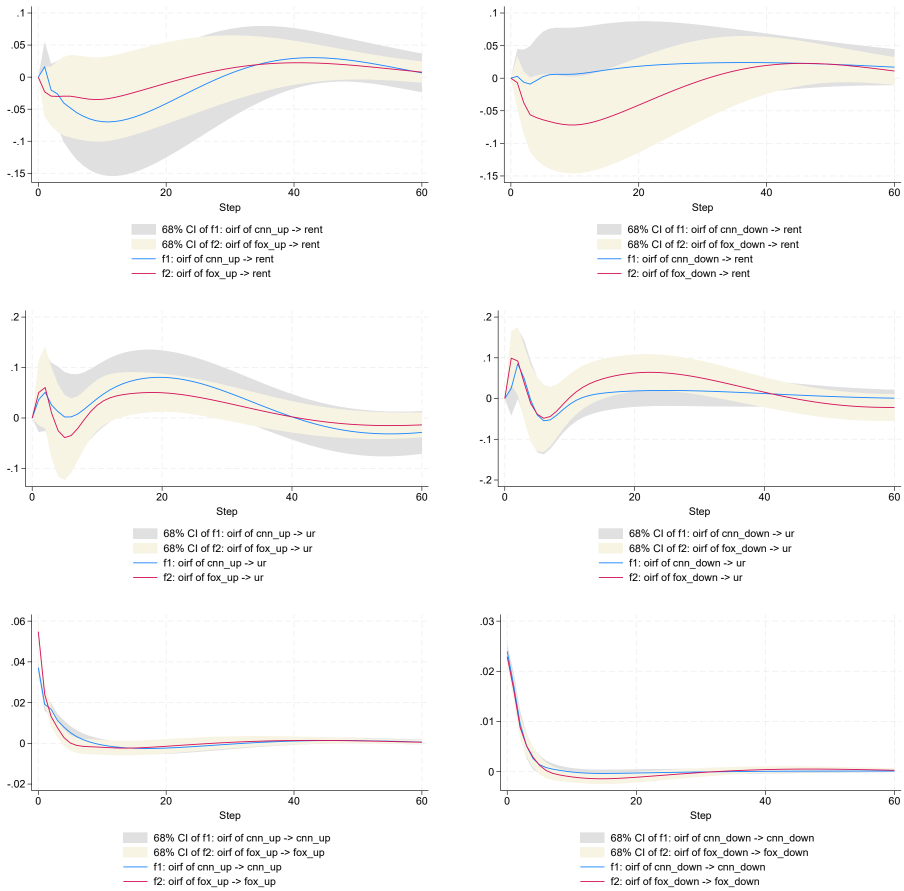

Figure 3: OIRFs for rent prices

Source: own.

5 Discussion

In this chapter, we discuss the responses of each variable included in the analysis to an increase in television news coverage of rising and falling prices.

5.1 CPI

The responses of CPI growth to shocks from Television news reporting on rising and falling prices can be distinguished by their magnitude and persistence. Across the specifications, increased coverage of rising prices has an insignificant impact on

CPI growth initially, with significant negative effects emerging in the medium term. In contrast, coverage of falling prices produces a significant negative impact on CPI in the short term.

Figure 2 shows that CPI growth responds differently to shocks in television news coverage of rising and falling prices. A shock to coverage of rising prices has an insignificant impact on CPI growth throughout the short horizon. By contrast, CPI growth responds negatively and significantly to a shock in coverage of falling prices on impact; however, this is followed by a brief positive and significant impact in the medium term, which dissipates shortly thereafter.

Similarly, Figure 3 indicates that a shock to television news coverage of falling prices has a relatively stronger impact on CPI growth than coverage of rising prices. Specifically, CPI growth responds negatively and significantly in the short term to a shock in coverage of falling prices, whereas the response to coverage of rising prices remains insignificant.

5.2 The Federal Funds Effective Rate

The effects of positive shocks to the coverage of rising and falling prices on the federal funds effective rate cannot be clearly distinguished. As shown in Figure 2, the federal funds effective rate displays a relatively uniform response to a shock in television news coverage of both rising and falling prices. In particular, such a shock has a positive and significant impact on the federal funds effective rate; however, the immediate response is insignificant, with significance appearing in the short-term horizon.

The OIRFs in Figure 3 show similar patterns, although the magnitude and persistence of the responses differ slightly. The immediate impact of a shock to television news coverage of rising and falling prices is positive but insignificant, becoming significant over the short-term horizon before gradually dissipating.

5.3 Commodity price expectations

Food price change expectations respond negatively and significantly to a shock in television news coverage of rising prices. In contrast, a shock to coverage of falling prices has an indeterminate and insignificant impact on food price change expectations. This distinction has important policy implications, as coverage of rising prices appears to transmit into food prices, whereas coverage of falling prices does not generate a measurable impact.

Consistent with the first set of VAR models, gas price change expectations also exhibit a differentiated response to shocks in television news coverage. A shock to coverage of rising prices leads to a negative and significant impact on gas price change expectations. By contrast, the impact of a shock to coverage of falling prices is indeterminate and insignificant.

Overall, both food and gas price change expectations display negative and significant impacts in response to shocks in television news coverage of rising prices in parts of the OIRFs, whereas responses to coverage of falling prices are generally insignificant.

In contrast, rent price change expectations show no statistically significant response to shocks in television news coverage of either rising or falling prices. This null result may be related to the specific characteristics of rent prices, which differ from the other two commodity price expectations analysed in the study.

5.4 Inflation uncertainty

Inflation uncertainty responds similarly to shocks in television news coverage of both rising and falling prices, with significant positive effects. However, the response to coverage of rising prices is more persistent than the response to coverage of falling prices. A shock to coverage of falling prices has a positive and significant impact only in the short term, whereas a shock to coverage of rising prices has a positive and significant impact only in the medium term.

As shown in Figure 2, the short-term responses of inflation uncertainty to shocks in television news coverage of rising and falling prices are relatively uniform. A shock to television news coverage of both rising and falling prices leads to a significant increase in inflation uncertainty, although the magnitude of the response is somewhat greater for coverage of falling prices than for coverage of rising prices. After the short-term effects dissipate, inflation uncertainty responds positively and significantly to a shock in coverage of rising prices in the medium term.

Consistent with the previous set of OIRFs, inflation uncertainty exhibits positive and significant impacts in response to shocks in television news coverage of both rising and falling prices. Figure 3 further shows that a shock to coverage of rising prices has a positive and significant impact on inflation uncertainty in the medium term, whereas a shock to coverage of falling prices has a positive and significant impact in the short term.

5.5 Industrial production

Television news coverage of rising and falling prices affects industrial production in several ways. A shock to television news coverage of inflation generally has a negative and significant impact on industrial production in the medium term.

As shown in Figure 2, a shock to television news coverage of rising and falling prices has the most pronounced negative impact on industrial production in the short term. The immediate response is insignificant; however, the impact becomes significant in the short term and dissipates shortly afterwards. The impact then re-emerges and becomes negative and significant in the medium term, highlighting the persistence of industrial production responses to shocks in television news coverage.

Consistent with these findings, Figure 3 shows that industrial production responds negatively and significantly to shocks in television news coverage of both rising and falling prices.

5.6 Unemployment rate

The unemployment rate rises significantly in response to increased television news coverage of rising prices, whereas coverage of falling prices has an insignificant and largely indeterminate impact. As with food prices, shocks to coverage of rising prices produce a relatively stronger impact than shocks to coverage of falling prices.

As shown in Figure 2, the unemployment rate displays relatively uniform responses to shocks in television news coverage of both rising and falling prices in the short term. The immediate impact is positive but insignificant; it becomes briefly significant before dissipating. In the medium term, the responses diverge, with a positive and significant impact observed only after a shock to television news coverage of rising prices.

Figure 3 shows a consistent pattern: a positive and significant impact of television news coverage of rising prices on the unemployment rate is observed only in the medium term. In the short term, the impact of shocks to coverage of both rising and falling prices remains insignificant and indeterminate, while the medium-term response to coverage of falling prices also remains insignificant.

6 Conclusion

This study examines how television news coverage of rising and falling prices impacts price change expectations. Media coverage of rising prices affects food and gas price change expectations, while the impact on rent price change expectations remains negligible. Overall, this suggests that the impact of the media on commodity price change expectations is limited, varies across sectors, and depends on the nature and content of the reporting.

References

Aarab, I., Bańbura, M., Bobeica, E., & Leguay, E. (2025). Monitoring attention to inflation in the news. ECB Economic Bulletin, Issue 6, 62-68. https://www.ecb.europa.eu/pub/pdf/ecbu/eb202506.mt.pdf

Assenmacher, K., Glöckler, G., Holton, S., Trautmann, P., Ioannou, D., Mee, S., Alonso, C., Argiri, E., Arigoni, F., Bakk-Simon, K., Bergbauer, S., Bitterlich, M. T., Byron, J., Carvalho, A., Catenaro, M., Charalampakis, E., Deroose, M., Ehrmann, M., Fernandez, R., Ferreira, C., Ferrero, G., Gardt, M., Georgarakos, D., Gertler, P., Giovannini, A., Goldfayn-Frank, O., Goodhead, R., Grandia, R., Hellström, J., Hernborg, N., Herrala, N., Hoffmann, M., Huertgen, P., Ioannidis, M., Istrefi, K., Kalnberzina, K., Kedan, D., Kenny, G., Kocharkov, G., Linzert, T., Manrique, M., Márquez, V., Mestre, R., Meyer, J., Mönch, E., Nardelli, S., Newby, E., Nomm, N., Pavlova, L., Penalver, A., Reedik, R., Rieder, K., Ruhe, C., Samarina, A., Šanta, M., Schupp, F., Schultefrankenfeld, G., Sciot, G., Silgoner, M., Skotida, I., Stylianou, A., Taylor, E., Tischer, J., Tiseno, A., Weber, M., & Winkler, B. (december 2021). Clear, consistent and engaging: ECB monetary policy communication in a changing world. ECB Strategy Review (ECB Occasional Paper No. 274/September 2021). European Central Bank, **h**ttps://www.ecb.europa.eu//pub/pdf/scpops/ecb.op274~9aca14e6f6.en.pdf

Baker, S. R., Bloom, N., & Davis, S. J. (2016). Measuring Economic Policy Uncertainty. The Quarterly Journal of Economics, 131(4), 1593-1636. https://doi.org/10.1093/qje/qjw024

Barrales-Ruiz, J., Islam, A., Mohammed, M., & Panovska, I. (2026). From beliefs to prices: Analyzing how inflation expectations affect the inflation distribution. *Journal of Economic Dynamics and Control, 186*, 105318. https://doi.org/10.1016/j.jedc.2026.105318

Bassett, W. F., Chosak, M. B., Driscoll, J. C., & Zakrajšek, E. (2014). Changes in Bank Lending Standards and the Macroeconomy. *Journal of Monetary Economics, 62*, 23-40. https://doi.org/10.1016/j.jmoneco.2013.12.005

Bauer, M. D. (2015). *Inflation expectations and the news. International Journal of Central Banking, 11*(2). https://www.ijcb.org/journal/v11n2/inflation-expectations-and-news

Binder, C. C., Campbell, J. R., & Ryngaert, J. M. (2024). Consumer inflation expectations: Daily dynamics. *Journal of Monetary Economics, 145*(Supplement), 103613. https://doi.org/10.1016/j.jmoneco.2024.103613

Binder, C., & Kamdar, R. (2022). Expected and realized inflation in historical perspective. *Journal of Economic Perspectives, 36*(3), 131–156. https://doi.org/10.1257/jep.36.3.131

Binder, C., Frank, P., & Ryngaert, J. M. (2025). *The causal effect of news on inflation expectations* (NBER Working Paper No. 34088). National Bureau of Economic Research. https://doi.org/10.3386/w34088

Blanchard, O. J., & Bernanke, B. S. (2023). *What caused the US pandemic-era inflation?* (NBER Working Paper No. 31417). National Bureau of Economic Research. https://doi.org/10.3386/w31417

Board of Governors of the Federal Reserve System. (2025a). *Industrial Production: Total Index*. FRED, Federal Reserve Bank of St. Louis. https://fred.stlouisfed.org/series/INDPRO

Board of Governors of the Federal Reserve System. (2025b). *Federal Funds Effective Rate*. FRED, Federal Reserve Bank of St. Louis. https://fred.stlouisfed.org/series/FEDFUNDS

Caldara, D., Conlisk, S., Iacoviello, M., & Penn, M. (2026). Do geopolitical risks raise or lower inflation? *Journal of International Economics, 159*, 104188. https://doi.org/10.1016/j.jinteco.2025.104188

Chahrour, R., Shapiro, A. H., & Wilson, D. J. (2025). *News selection and household inflation expectations* (Working Paper No. 2024-31). Federal Reserve Bank of San Francisco. https://doi.org/10.24148/wp2024-31

Christensen, J. H. E., Gamble, J. M., & Zhu, S. (2020, May 11). *Coronavirus and the risk of deflation* (FRBSF Economic Letter 2020-11). Federal Reserve Bank of San Francisco. https://www.frbsf.org/research-and-insights/publications/economic-letter/2020/05/coronavirus-and-risk-of-deflation/

D'Acunto, F., Malmendier, U., & Weber, M. (2023). What do the data tell us about inflation expectations? In R. Bachmann, G. Topa, & W. van der Klaauw (Eds.), *Handbook of economic expectations* (pp. 133–161). Academic Press. https://doi.org/10.1016/B978-0-12-822927-9.00012-4

de Soyres, F., Pradhan, A., & Saijid, Z. (2026, March 30). *Is the inflation process in advanced economies different after the pandemic?* FEDS Notes. Board of Governors of the Federal Reserve System. https://doi.org/10.17016/2380-7172.4024

Dvorkin, M. A., Leibovici, F., & Santacreu, A. M. (2025, October 16). *How tariffs are affecting prices in 2025*. Federal Reserve Bank of St. Louis. https://www.stlouisfed.org/on-the-economy/2025/oct/how-tariffs-are-affecting-prices-2025

Federal Reserve Bank of New York. (2025a). *Survey of Consumer Expectations: Inflation Uncertainty*. Federal Reserve Bank of New York. https://www.newyorkfed.org/microeconomics/sce#/

Federal Reserve Bank of New York. (2025b). *Survey of Consumer Expectations: Food*. Federal Reserve Bank of New York. https://www.newyorkfed.org/microeconomics/sce#/

Federal Reserve Bank of New York. (2025c). *Survey of Consumer Expectations: Gas*. Federal Reserve Bank of New York. https://www.newyorkfed.org/microeconomics/sce#/

Federal Reserve Bank of New York. (2025d). *Survey of Consumer Expectations: Rent*. Federal Reserve Bank of New York. https://www.newyorkfed.org/microeconomics/sce#/

Gabrovšek, N., & Pavlič. D. (2026). *Media attention on inflation: Evidence form over 600,000 web scraped news articles*. Banka Slovenije, Short Economic and Financial Analyses. https://www.bsi.si/storage/uploads/fb8d0861-f585-46c5-b916-96f3c7ed61d8/KEFA_-Media-attention-on-inflation.pdf

GDELT Project. (2025). *Summary API* (Internet Archive TV News Archive). https://api.gdeltproject.org/api/v2/summary/summary?d=iatv

Hacıoğlu-Hoke, S., Malladi, S., & Feler, L. (2026, March 5). *The slow climb: How tariffs gradually raised retail prices in 2025*. FEDS Notes. Board of Governors of the Federal Reserve System. https://doi.org/10.17016/2380-7172.4010

Hajdini, I., Shapiro, A., Smith, A. L., & Villar, D. (2025). *Inflation since the pandemic: Lessons and challenges* (Finance and Economics Discussion Series 2025-070). Board of Governors of the Federal Reserve System. https://doi.org/10.17016/FEDS.2025.070

Halbersleben, N., Jordà, Ò., & Nechio, F. (2026, March 30). *The effects of tariffs on the components of inflation* (FRBSF Economic Letter 2026-07). Federal Reserve Bank of San Francisco. https://www.frbsf.org/research-and-insights/publications/economic-letter/2026/03/effects-of-tariffs-on-components-of-inflation/

Hobijn, B., & Nechio, F. (2025, May 19). *The effects of tariffs on inflation and production costs* (FRBSF Economic Letter 2025-12). Federal Reserve Bank of San Francisco. https://www.frbsf.org/research-and-insights/publications/economic-letter/2025/05/effects-of-tariffs-on-inflation-and-production-costs/

Kmetz, A., Shapiro, A. H., & Wilson, D. J. (2022). *Can the news drive inflation expectations?* (FRBSF Economic Letter 2022-31). Federal Reserve Bank of San Francisco. https://www.frbsf.org/wp-content/uploads/el2022-31.pdf

Lamla, J. L., & Lein, S.M. (2014). The role of media for consumers' inflation expectation formation. *Journal of Economic Behavior* & *Organization, 106(2014)*. 62-77. https://doi.org/10.1016/j.jebo.2014.05.004

Larsen, V. H., Thorsrud, L. A., & Zhulanova, J. (2021). News-driven inflation expectations and information rigidities. *Journal of Monetary Economics, 117*, 507–520. https://doi.org/10.1016/j.jmoneco.2020.03.004

Lebow, D., & Peneva, E. (2024, January 19). *Inflation perceptions during the COVID pandemic and recovery*. FEDS Notes. Board of Governors of the Federal Reserve System. https://doi.org/10.17016/2380-7172.3439

Lei, C., Lu, Z., & Zhang, C. (2015). News on inflation and the epidemiology of inflation expectations in China. *Economic Systems, 39*(4), 644–653. https://doi.org/10.1016/j.ecosys.2015.04.006

Macaulay, A., & Song, W. (2023). News media, inflation, and sentiment. *AEA Papers and Proceedings, 113*, 172–176. https://doi.org/10.1257/pandp.20231117

Mehra, Y. P., & Herrington, C. (2008). *On the sources of movements in inflation expectations: A few insights from a VAR model. Economic Quarterly, 94*(2), 121–146. Federal Reserve Bank of Richmond. https://www.richmondfed.org/-/media/RichmondFedOrg/publications/research/economic_quarterly/2008/spring/pdf/mehra_herrington.pdf

Minton, R., & Somale, M. (2025). *Detecting tariff effects on consumer prices in real time*. FEDS Notes. Board of Governors of the Federal Reserve System.

Moessner, R. (2024). Effects of inflation expectations on inflation. *National Institute Economic Review, 270*, 55–63. https://doi.org/10.1017/nie.2024.24

Pfajfar, D., & Santoro, E. (2013). News on inflation and the epidemiology of inflation expectations. *Journal of Money, Credit and Banking, 45*(6), 1045–1067. https://doi.org/10.1111/jmcb.12043

Weber, M., D'Acunto, F., Gorodnichenko, Y., & Coibion, O. (2022). The subjective inflation expectations of households and firms: Measurement, determinants, and implications. *Journal of Economic Perspectives, 36*(3), 157–184. https://doi.org/10.1257/jep.36.3.157

Xu, Y., Liu, Z., & Ortiz, J. (2018). The relationship between media bias and inflation expectations in P.R. China. *Research in International Business and Finance*, 45(C), 402-412. http://dx.doi.org/10.1016/j.ribaf.2017.07.171

Xu, Y., Liu, Z., Chen, J., & Salem S. (2024). How official TV news affect public inflation expectations? Evidence from the Chinese national broadcaster China Central Television. *International Journal of Finance & Economics*, vol. 29(1), 819-831. https://doi.org/10.1002/ijfe.2708

Yang, T., Dong, Q., Du, M., & Du, Q. (2023). Geopolitical risks, oil price shocks and inflation: Evidence from a TVP–SV–VAR approach. *Energy Economics, 127*(Part B), 107099. https://doi.org/10.1016/j.eneco.2023.107099

Zhou, L. (2025). Propagation of geopolitical risks to the Federal Reserve's policy toolkit. *Economic Papers, 44*(1), 15–48. https://doi.org/10.1111/1759-3441.12435

Appendix

Food: cnn_up

Lag-order selection criteria

Sample: . thru . Number of obs = 137

Lag	LL	LR	df	p	FPE	AIC	HQIC	SBIC
0	273.537				4.8e-11	-3.89106	-3.83043	-3.74186
1	1101.74	1656.4	49	0.000	5.5e-16	-15.2663	-14.7813	-14.0727*
2	1212.21	220.94	49	0.000	2.3e-16	-16.1636	-15.2542*	-13.9257
3	1283.9	143.38	49	0.000	1.7e-16	-16.4949	-15.161	-13.2126
4	1336.82	105.83	49	0.000	1.6e-16	-16.5521	-14.7938	-12.2254
5	1390.92	108.21	49	0.000	1.5e-16*	-16.6266	-14.4439	-11.2556
6	1441.44	101.04*	49	0.000	1.6e-16	-16.6488*	-14.0417	-10.2334

* optimal lag
Endogenous: infunc food ln_ip ur dln_cpi cnn_up ffer
Exogenous: _cons

Eigenvalue stability condition

Eigenvalue	Modulus
.9818705 + .07426414*i*	.984675
.9818705 - .07426414*i*	.984675
.9220691	.922069
.8742563	.874256
.8115034	.811503
.5786798 + .1903446*i*	.609181
.5786798 - .1903446*i*	.609181
-.4748622	.474862
.2197808 + .3650725*i*	.426124
.2197808 - .3650725*i*	.426124
-.3251231	.325123
-.2329935 + .04441802*i*	.23719
-.2329935 - .04441802*i*	.23719
.06037361	.060374

All the eigenvalues lie inside the unit circle.
VAR satisfies stability condition.

Food: fox_up

Lag-order selection criteria

Sample: . thru . Number of obs = 137

Lag	LL	LR	df	p	FPE	AIC	HQIC	SBIC
0	247.282				7.1e-11	-3.50777	-3.44714	-3.35857
1	1058.37	1622.2	49	0.000	1.0e-15	-14.6332	-14.1481	-13.4396*
2	1164.94	213.14	49	0.000	4.5e-16	-15.4736	-14.5642*	-13.2357
3	1239.12	148.36	49	0.000	3.2e-16	-15.8412	-14.5073	-12.5589
4	1308.43	138.61	49	0.000	2.4e-16	-16.1376	-14.3794	-11.811
5	1363.28	109.71	49	0.000	2.3e-16*	-16.2231	-14.0404	-10.852
6	1415.13	103.69*	49	0.000	2.4e-16	-16.2646*	-13.6575	-9.84918

* optimal lag
Endogenous: infunc food ln_ip ur dln_cpi fox_up ffer
Exogenous: _cons

Eigenvalue stability condition

Eigenvalue	Modulus
.9816506 + .06797387*i*	.984001
.9816506 - .06797387*i*	.984001
.9319305	.93193
.8660947	.866095
.7478228	.747823
.5398708 + .271076*i*	.604105
.5398708 - .271076*i*	.604105
-.4716155	.471615
.1745139 + .3762312*i*	.414735
.1745139 - .3762312*i*	.414735
-.2388579	.238858
-.1546062 + .06950357*i*	.169511
-.1546062 - .06950357*i*	.169511
.04807587	.048076

All the eigenvalues lie inside the unit circle.
VAR satisfies stability condition.

Food: cnn_down

Lag-order selection criteria

Sample: . thru . Number of obs = 137

Lag	LL	LR	df	p	FPE	AIC	HQIC	SBIC
0	336.601				1.9e-11	-4.81169	-4.75106	-4.6625
1	1160.63	1648.1	49	0.000	2.3e-16	-16.126	-15.6409	-14.9324*
2	1273.01	224.77	49	0.000	9.3e-17	-17.0513	-16.1418*	-14.8133
3	1342.38	138.73	49	0.000	7.0e-17	-17.3486	-16.0147	-14.0663
4	1395.03	105.3	49	0.000	6.8e-17*	-17.4018*	-15.6436	-13.0752
5	1435.82	81.596	49	0.002	8.0e-17	-17.2821	-15.0994	-11.911
6	1492.61	113.57*	49	0.000	7.7e-17	-17.3957	-14.7887	-10.9803

* optimal lag
Endogenous: infunc food ln_ip ur dln_cpi cnn_down ffer
Exogenous: _cons

Eigenvalue stability condition

Eigenvalue	Modulus
.9805772 + .06457383*i*	.982701
.9805772 - .06457383*i*	.982701
.9206871	.920687
.8946497	.89465
.6052266 + .07223289*i*	.609522
.6052266 - .07223289*i*	.609522
.4197663 + .2375979*i*	.482345
.4197663 - .2375979*i*	.482345
.1505885 + .4534272*i*	.477779
.1505885 - .4534272*i*	.477779
-.4255234	.425523
-.2466018 + .09681916*i*	.264927
-.2466018 - .09681916*i*	.264927
-.1831387	.183139

All the eigenvalues lie inside the unit circle.
VAR satisfies stability condition.

Food: fox_down

Lag-order selection criteria

Sample: . thru . Number of obs = 137

Lag	LL	LR	df	p	FPE	AIC	HQIC	SBIC
0	341.051				1.8e-11	-4.87666	-4.81603	-4.72746
1	1179.32	1676.5	49	0.000	1.8e-16	-16.3988	-15.9137	-15.2052*
2	1281.39	204.15	49	0.000	8.3e-17	-17.1736	-16.2642*	-14.9357
3	1353.46	144.14	49	0.000	6.0e-17	-17.5104	-16.1765	-14.2281
4	1408.46	110	49	0.000	5.6e-17	-17.598	-15.8397	-13.2713
5	1464.17	111.42	49	0.000	5.3e-17*	-17.6959	-15.5133	-12.3249
6	1515.45	102.56*	49	0.000	5.5e-17	-17.7292*	-15.1222	-11.3138

* optimal lag
Endogenous: infunc food ln_ip ur dln_cpi fox_down ffer
Exogenous: _cons

Eigenvalue stability condition

Eigenvalue	Modulus
.981544 + .06678512*i*	.983813
.981544 - .06678512*i*	.983813
.9289048	.928905
.8718455	.871846
.7341206	.734121
.5476731 + .2123175*i*	.587388
.5476731 - .2123175*i*	.587388
.1394039 + .4546715*i*	.475562
.1394039 - .4546715*i*	.475562
-.410475	.410475
-.3141668	.314167
-.2410292	.241029
.1846613	.184661
-.0146922	.014692

All the eigenvalues lie inside the unit circle.
VAR satisfies stability condition.

Gas: cnn_up

Lag-order selection criteria

Sample: . thru . Number of obs = 137

Lag	LL	LR	df	p	FPE	AIC	HQIC	SBIC
0	231.876				8.9e-11	-3.28286	-3.22223	-3.13366
1	1028.23	1592.7	49	0.000	1.6e-15	-14.1931	-13.7081	-12.9995*
2	1120.89	185.33	49	0.000	8.6e-16	-14.8305	-13.9211*	-12.5926
3	1196.01	150.24	49	0.000	6.0e-16	-15.2118	-13.878	-11.9295
4	1261.75	131.47	49	0.000	4.8e-16	-15.4561	-13.6979	-11.1295
5	1302.65	81.817	49	0.002	5.6e-16	-15.338	-13.1554	-9.96696
6	1370.29	135.28*	49	0.000	4.6e-16*	-15.6101*	-13.0031	-9.19469

* optimal lag
Endogenous: infunc gas ln_ip ur dln_cpi cnn_up ffer
Exogenous: _cons

Eigenvalue stability condition

Eigenvalue	Modulus
.9824107 + .06873167*i*	.984812
.9824107 - .06873167*i*	.984812
.8848426	.884843
.7799704 + .1201632*i*	.789172
.7799704 - .1201632*i*	.789172
.6326933 + .128828*i*	.645676
.6326933 - .128828*i*	.645676
.2101187 + .4505795*i*	.497164
.2101187 - .4505795*i*	.497164
-.3829191	.382919
-.260402 + .09416265*i*	.276904
-.260402 - .09416265*i*	.276904
-.1744129	.174413
.08230132	.082301

All the eigenvalues lie inside the unit circle.
VAR satisfies stability condition.

Gas: fox_up

Lag-order selection criteria

Sample: . thru .   Number of obs = 137

Lag	LL	LR	df	p	FPE	AIC	HQIC	SBIC
0	188.226				1.7e-10	-2.64564	-2.58501	-2.49644
1	976.475	1576.5	49	0.000	3.4e-15	-13.4376	-12.9526	-12.244*
2	1067.38	181.81	49	0.000	1.9e-15	-14.0494	-13.1399	-11.8114
3	1148.73	162.69	49	0.000	1.2e-15	-14.5216	-13.1877*	-11.2393
4	1222.48	147.51	49	0.000	8.5e-16	-14.883	-13.1247	-10.5563
5	1276.46	107.96	49	0.000	8.2e-16	-14.9557	-12.773	-9.5846
6	1335.98	119.03*	49	0.000	7.5e-16*	-15.1092*	-12.5021	-8.69375

* optimal lag
Endogenous: infunc gas ln_ip ur dln_cpi fox_up ffer
Exogenous: _cons

Eigenvalue stability condition

Eigenvalue	Modulus
.9802692 + .06691756*i*	.982551
.9802692 - .06691756*i*	.982551
.8715321	.871532
.7362807 + .09048738*i*	.74182
.7362807 - .09048738*i*	.74182
.6463297 + .09691377*i*	.653555
.6463297 - .09691377*i*	.653555
.220044 + .4204314*i*	.474533
.220044 - .4204314*i*	.474533
-.4065789	.406579
-.1734622 + .2534563*i*	.307131
-.1734622 - .2534563*i*	.307131
-.2342036	.234204
.1071193	.107119

All the eigenvalues lie inside the unit circle.
VAR satisfies stability condition.

Gas: cnn_down

Lag-order selection criteria

Sample: . thru . Number of obs = 137

Lag	LL	LR	df	p	FPE	AIC	HQIC	SBIC
0	315.041				2.6e-11	-4.49696	-4.43633	-4.34776
1	1072.85	1515.6	49	0.000	8.4e-16	-14.8445	-14.3595	-13.651*
2	1171.08	196.47	49	0.000	4.1e-16	-15.5633	-14.6538*	-13.3253
3	1246.05	149.93	49	0.000	2.9e-16	-15.9423	-14.6085	-12.66
4	1303.54	114.98	49	0.000	2.6e-16	-16.0662	-14.308	-11.7395
5	1348.95	90.836	49	0.000	2.9e-16	-16.0139	-13.8313	-10.6429
6	1409.09	120.26*	49	0.000	2.6e-16*	-16.1764*	-13.5694	-9.761

* optimal lag
Endogenous: infunc gas ln_ip ur dln_cpi cnn_down ffer
Exogenous: _cons

Eigenvalue stability condition

Eigenvalue	Modulus
.9768445 + .06428701*i*	.978958
.9768445 - .06428701*i*	.978958
.8464439 + .01298144*i*	.846543
.8464439 - .01298144*i*	.846543
.7013364 + .1329316*i*	.713823
.7013364 - .1329316*i*	.713823
.4081672 + .3155744*i*	.515934
.4081672 - .3155744*i*	.515934
.1622897 + .4660128*i*	.493463
.1622897 - .4660128*i*	.493463
-.3276254 + .03351634*i*	.329335
-.3276254 - .03351634*i*	.329335
-.1604378 + .08617051*i*	.182114
-.1604378 - .08617051*i*	.182114

All the eigenvalues lie inside the unit circle.
VAR satisfies stability condition.

Gas: fox_down

Lag-order selection criteria

Sample: . thru . Number of obs = 137

Lag	LL	LR	df	p	FPE	AIC	HQIC	SBIC
0	306.703				3.0e-11	-4.37522	-4.31459	-4.22602
1	1094.82	1576.2	49	0.000	6.1e-16	-15.1652	-14.6802	-13.9717*
2	1181.75	173.86	49	0.000	3.5e-16	-15.719	-14.8095*	-13.481
3	1255.72	147.94	49	0.000	2.5e-16	-16.0835	-14.7497	-12.8012
4	1319.59	127.73	49	0.000	2.1e-16	-16.3005	-14.5423	-11.9739
5	1371.37	103.56	49	0.000	2.1e-16	-16.3411	-14.1585	-10.9701
6	1427.22	111.71*	49	0.000	2.0e-16*	-16.4412*	-13.8341	-10.0258

* optimal lag
Endogenous: infunc gas ln_ip ur dln_cpi fox_down ffer
Exogenous: _cons

Eigenvalue stability condition

Eigenvalue	Modulus
.9791499 + .06715124*i*	.98145
.9791499 - .06715124*i*	.98145
.8472521	.847252
.8133291	.813329
.6854844 + .1251028*i*	.696807
.6854844 - .1251028*i*	.696807
.2042101 + .4403319*i*	.48538
.2042101 - .4403319*i*	.48538
.39309 + .07979081*i*	.401106
.39309 - .07979081*i*	.401106
-.3369613 + .04784824*i*	.340342
-.3369613 - .04784824*i*	.340342
-.1404533 + .2168419*i*	.258355
-.1404533 - .2168419*i*	.258355

All the eigenvalues lie inside the unit circle.
VAR satisfies stability condition.

Rent: cnn_up

Lag-order selection criteria

Sample: . thru . Number of obs = 137

Lag	LL	LR	df	p	FPE	AIC	HQIC	SBIC
0	241.594				7.7e-11	-3.42473	-3.3641	-3.27554
1	1111.83	1740.5	49	0.000	4.8e-16	-15.4135	-14.9285	-14.2199*
2	1201.44	179.22	49	0.000	2.7e-16	-16.0064	-15.0969*	-13.7685
3	1253.77	104.67	49	0.000	2.6e-16	-16.0551	-14.7212	-12.7728
4	1308.3	109.05	49	0.000	2.4e-16*	-16.1357	-14.3775	-11.8091
5	1357.66	98.728	49	0.000	2.5e-16	-16.1411	-13.9584	-10.77
6	1406.99	98.661*	49	0.000	2.7e-16	-16.1459*	-13.5388	-9.73045

* optimal lag
Endogenous: infunc rent ln_ip ur dln_cpi cnn_up ffer
Exogenous: _cons

Eigenvalue stability condition

Eigenvalue	Modulus
.9694413 + .08528141*i*	.973185
.9694413 - .08528141*i*	.973185
.9712582	.971258
.8915613	.891561
.8287503	.82875
.5837082 + .2746325*i*	.645088
.5837082 - .2746325*i*	.645088
.1952549 + .395539*i*	.441107
.1952549 - .395539*i*	.441107
-.3820069	.382007
-.2951424	.295142
-.2343126	.234313
-.1009495 + .01325781*i*	.101816
-.1009495 - .01325781*i*	.101816

All the eigenvalues lie inside the unit circle.
VAR satisfies stability condition.

Rent: fox_up

Lag-order selection criteria

Sample: . thru . Number of obs = 137

Lag	LL	LR	df	p	FPE	AIC	HQIC	SBIC
0	206.206				1.3e-10	-2.90811	-2.84748	-2.75891
1	1060.31	1708.2	49	0.000	1.0e-15	-14.6615	-14.1764	-13.4679*
2	1148.01	175.39	49	0.000	5.8e-16	-15.2264	-14.3169*	-12.9884
3	1207.41	118.8	49	0.000	5.0e-16	-15.3782	-14.0443	-12.0959
4	1271.1	127.38	49	0.000	4.2e-16*	-15.5927*	-13.8344	-11.266
5	1319.34	96.493	49	0.000	4.4e-16	-15.5817	-13.399	-10.2106
6	1368.36	98.036*	49	0.000	4.7e-16	-15.5819	-12.9748	-9.16649

* optimal lag
Endogenous: infunc rent ln_ip ur dln_cpi fox_up ffer
Exogenous: _cons

Eigenvalue stability condition

Eigenvalue	Modulus
.9734009	.973401
.9684154 + .08148044*i*	.971837
.9684154 - .08148044*i*	.971837
.8792019	.879202
.7893671	.789367
.5655074 + .3478225*i*	.663912
.5655074 - .3478225*i*	.663912
-.4359578	.435958
.1682399 + .3645629*i*	.401511
.1682399 - .3645629*i*	.401511
-.1075982 + .2305879*i*	.254457
-.1075982 - .2305879*i*	.254457
-.2214791	.221479
-.1092591	.109259

All the eigenvalues lie inside the unit circle.
VAR satisfies stability condition.

Rent: cnn_down

Lag-order selection criteria

Sample: . thru . Number of obs = 137

Lag	LL	LR	df	p	FPE	AIC	HQIC	SBIC
0	317.99				2.5e-11	-4.54	-4.47937	-4.3908
1	1176.2	1716.4	49	0.000	1.9e-16	-16.3533	-15.8682	-15.1597*
2	1268.2	184.01	49	0.000	1.0e-16	-16.9811	-16.0716*	-14.7431
3	1321.47	106.52	49	0.000	9.5e-17*	-17.0433*	-15.7094	-13.761
4	1367.59	92.242	49	0.000	1.0e-16	-17.0013	-15.243	-12.6746
5	1409.32	83.475	49	0.002	1.2e-16	-16.8952	-14.7126	-11.5242
6	1461.93	105.21*	49	0.000	1.2e-16	-16.9479	-14.3408	-10.5325

* optimal lag
Endogenous: infunc rent ln_ip ur dln_cpi cnn_down ffer
Exogenous: _cons

Eigenvalue stability condition

Eigenvalue	Modulus
.9755448	.975545
.9688307 + .0794558*i*	.972083
.9688307 - .0794558*i*	.972083
.8788506	.878851
.729192	.729192
.521227 + .2817231*i*	.592491
.521227 - .2817231*i*	.592491
.1378912 + .4334511*i*	.454856
.1378912 - .4334511*i*	.454856
-.3810288	.381029
-.2449862	.244986
-.1672325	.167232
.07098262 + .1193818*i*	.13889
.07098262 - .1193818*i*	.13889

All the eigenvalues lie inside the unit circle.
VAR satisfies stability condition.

Rent: fox_down

Lag-order selection criteria

Sample: . thru . Number of obs = 137

Lag	LL	LR	df	p	FPE	AIC	HQIC	SBIC
0	318.343				2.5e-11	-4.54516	-4.48453	-4.39596
1	1195.33	1754	49	0.000	1.4e-16	-16.6325	-16.1475	-15.439*
2	1279.24	167.83	49	0.000	8.5e-17*	-17.1422	-16.2328*	-14.9043
3	1327.19	95.885	49	0.000	8.8e-17	-17.1268	-15.7929	-13.8445
4	1376.27	98.172	49	0.000	9.0e-17	-17.1281	-15.3698	-12.8014
5	1428.25	103.96	49	0.000	9.0e-17	-17.1716	-14.9889	-11.8005
6	1477.34	98.166*	49	0.000	9.6e-17	-17.1728*	-14.5657	-10.7574

* optimal lag
Endogenous: infunc rent ln_ip ur dln_cpi fox_down ffer
Exogenous: _cons

Eigenvalue stability condition

Eigenvalue	Modulus
.9729005	.9729
.9684419 + .08165796*i*	.971878
.9684419 - .08165796*i*	.971878
.8718398	.87184
.7915189	.791519
.571868 + .312269*i*	.651571
.571868 - .312269*i*	.651571
.1233175 + .4551985*i*	.471607
.1233175 - .4551985*i*	.471607
-.3373044 + .04374787*i*	.34013
-.3373044 - .04374787*i*	.34013
-.00048843 + .1960724*i*	.196073
-.00048843 - .1960724*i*	.196073
-.1451192	.145119

All the eigenvalues lie inside the unit circle.
VAR satisfies stability condition.