Commodity Price Moves Have Fairly Modest Effects on U.S. Inflation

Rising fuel prices are often thought to drive inflation in other goods and services. A new study, however, suggests that the effects of oil and other commodity price moves on U.S. inflation are more modest than one might expect.

In “Commodity Price Movements and PCE Inflation,” author Bart Hobijn calculates the contribution that changes in the price of crops and oil and gas made to the PCE, or personal consumption expenditures, index of U.S. inflation between June 2006 and June 2008 (Current Issues in Economics and Finance, vol. 14, no. 8).

Analyzing data on inter-industry purchases and sales, he determines that 1.5 percentage points of the 3.2 percent annualized PCE inflation over the period—slightly less than half of the growth in the index—can be linked to crop and oil and gas price increases. For core PCE inflation, which excludes food and fuel, 0.7 percentage point of the 2.2 percent annualized figure—a little less than a third of the growth in the index—stems from these increases.

These relatively modest figures lead Hobijn to conclude that “commodity prices—and particularly energy prices—are not the controlling force in core inflation dynamics that they are sometimes assumed to be.”

The author also studies the effect of swings in the price of crops and energy on the price of specific goods and services purchased by U.S. consumers. Here, he finds that commodity price increases affect only a limited set of goods prices. Higher crop prices translate narrowly into price hikes for food, tobacco, and gardening supplies; the effects of rising oil prices are largely confined to fuel, utility, and transportation prices. Hobijn observes that if higher prices are seen in core consumer goods and services, then “other inflationary pressures are undoubtedly at work.”

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The study focuses on a two-year period when crude petroleum prices increased at an average annual rate of 40 percent and grain prices rose at a 62 percent clip. Hobijn explains that while these trends have reversed sharply in the second half of 2008, the effects of the declines in oil and grain prices would be calculated in the same way and should have a proportional effect on inflation.

The article is available at www.newyorkfed.org/research/current_issues/ci14-8.html.

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MACROECONOMICS AND GROWTH

No. 355, November 2008
Imperfectly Credible Disinflation under Endogenous Time-Dependent Pricing
Marco Bonomo and Carlos Carvalho

Bonomo and Carvalho examine how credibility affects the outcome of a disinflation in a model with endogenous time-dependent pricing rules. Both the initial degree of price rigidity, calculated optimally, and, more notably, changes in the duration of price spells during disinflation play an important role in explaining the effects of imperfect credibility. The authors initially consider the costs of disinflation when the degree of credibility is fixed, and then allow agents to use Bayes’ rule to update beliefs about the “type” of monetary authority that they face. In both cases, the interaction between the endogeneity of time-dependent rules and imperfect credibility increases the output costs of disinflation. The pattern of the output response is more realistic in the case with learning.

No. 359, December 2008
Rethinking the Measurement of Household Inflation Expectations: Preliminary Findings
Wilbert van der Klaauw, Wändi Bruine de Bruin, Giorgio Topa, Simon Potter, and Michael Bryan

This paper reports preliminary findings from a Federal Reserve Bank of New York research program aimed at improving survey measures of inflation expectations. The authors find that seemingly small differences in how inflation is referred to in a survey can lead respondents to consider significantly different price concepts. For near-term inflation, the “prices in general” question in the monthly Reuters/University

Publications and Papers

The Research and Statistics Group produces a wide range of publications:

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- **Staff Reports**—technical papers intended for publication in leading economic and finance journals, available only online.
- **Publications and Other Research**—an annual catalogue of our research output.
of Michigan Surveys of Consumers can elicit responses that focus on the most visible prices, such as gasoline or food. Questions on the “rate of inflation” can lead to responses on the prices that U.S. citizens pay in general—an interpretation, or concept, closer to the definition of inflation that economists have in mind; they also lead to both lower levels of reported inflation and to lower disagreement among respondents. In addition, the authors present results associated with new survey questions that assess the degree of individual uncertainty about future inflation outcomes as well as future expected wage changes. Finally, using the panel dimension of the surveys, the study finds that individual responses exhibit considerable persistence, both in the expected level of inflation and in forecast uncertainty. Respondents who are more uncertain make larger revisions to their expectations in the next survey.

INTERNATIONAL

No. 351, October 2008
Aggregation and the PPP Puzzle in a Sticky-Price Model
Carlos Carvalho and Fernanda Nechio

Carvalho and Nechio study the purchasing power parity (PPP) puzzle in a multisector, two-country, sticky-price model. The authors show that deviations of the real exchange rate from PPP are more volatile and persistent when compared with a counterfactual one-sector world economy that features the same average frequency of price changes and is otherwise identical to the multisector world economy. When simulated with a sectoral distribution of price stickiness that matches the microeconomic evidence for the U.S. economy, the model produces a half-life of deviations from PPP of forty-five months. In contrast, the half-life of such deviations in the counterfactual one-sector economy is only slightly above one year. Their model also provides a decomposition of this difference in persistence that allows a structural interpretation of the approaches found in the empirical literature on aggregation and the real exchange rate.

MICROECONOMICS

No. 350, October 2008
Housing Busts and Household Mobility
Fernando Ferreira, Joseph Gyourko, and Joseph Tracy

Using two decades of American Housing Survey data from 1985 to 2005, the authors estimate the influence of negative home equity and rising mortgage interest rates on household mobility. They find that both factors lead to lower, not higher, mobility rates over time. The effects are economically large—mobility is almost 50 percent lower for owners with negative equity in their homes. This finding does not imply that current concerns over defaults and homeowners having to relocate are entirely misplaced. It does indicate that, in the past, the mortgage lock-in effects of these two factors were dominant over time. The study observes that policymakers may wish to begin considering the consequences of mortgage lock-in and reduced household mobility because they are quite different from the consequences associated with default and higher mobility.

BANKING AND FINANCE

No. 349, October 2008
Liquidity and Congestion
Gara M. Afonso

This paper studies the relationship between the arrival of potential investors and market liquidity in a search-based model of asset trading. The entry of investors into a specific market causes two contradictory effects. First, it reduces trading costs, which then attracts new investors (the thick market externality effect). But second, as investors concentrate on one side of the
market, the market becomes “congested,” decreasing the returns to participating in this market and discouraging new investors from entering (what Afonso calls the congestion effect). The equilibrium level of market liquidity depends on which of the two effects dominates. When congestion is the leading effect, some interesting results arise. In particular, the author finds that diminishing trading costs in this market can impair liquidity and reduce welfare.

No. 352, October 2008
Systemic Risk and Liquidity in Payment Systems
Gara M. Afonso and Hyun Song Shin

Afonso and Shin study liquidity and systemic risk in high-value payments systems. Flows in high-value systems are characterized by high velocity, meaning that the total amount paid and received is high relative to the stock of reserves. In such systems, banks rely heavily on incoming funds to finance outgoing payments, necessitating a high degree of coordination and synchronization. The authors use lattice-theoretic methods to solve for the unique fixed point of an equilibrium mapping and conduct comparative statics analyses on changes to the environment. They find that banks attempting to conserve liquidity cause an increase in the demand for intraday credit and, ultimately, a disruption of payments. Additionally, they find that when a bank is identified as vulnerable to failure and other banks choose to cancel payments to that bank, there are systemic repercussions for the whole financial system.

No. 353, October 2008
The Case for TIPS: An Examination of the Costs and Benefits
Jennifer Roush, William Dudley, and Michelle Steinberg Ezer

Several studies have shown that, ex post, the issuance of Treasury Inflation-Protected Securities (TIPS) has cost U.S. taxpayers money. The authors propose that evaluations of the TIPS program be more comprehensive and focus on the ex ante costs of TIPS issuance versus nominal Treasury issuance and, especially when these costs are negligible, the more difficult-to-measure benefits of the program. Their study finds that the ex ante costs of TIPS issuance versus nominal Treasury issuance are currently about equal and that TIPS provide meaningful benefits to investors and policymakers.

No. 354, November 2008
The Topology of the Federal Funds Market
Morten L. Bech and Enghin Atalay

The recent turmoil in global financial markets underscores the importance of the federal funds market as a means of distributing liquidity throughout the financial system and as a tool for implementing monetary policy. In this paper, Bech and Atalay explore the network topology of the federal funds market. They find that the network is sparse, exhibits the small-world phenomenon, and is disassortative. In addition, reciprocity loans track the federal funds rate, and centrality measures are useful predictors of the interest rate of a loan.

No. 356, November 2008
Which Bank Is the “Central” Bank?
An Application of Markov Theory to the Canadian Large-Value Transfer System
Morten L. Bech, James T. E. Chapman, and Rod Garratt

Recently, economists have argued that a bank’s importance within the financial system depends not only on its individual characteristics but also on its position within the banking network. A bank is deemed to be “central” if, based on the authors’ network analysis, it is predicted to hold the most liquidity. In this paper, the authors use a method similar to Google’s PageRank procedure to rank banks in the Canadian Large-Value Transfer System. In doing so, they obtain estimates of the payment processing speeds for the individual banks. These differences in processing speeds are essential for explaining why observed daily
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The Research Group of the Federal Reserve Bank of New York: This online guide, updated for 2008-09, offers economists interested in joining the Group a fuller understanding of our activities; our research and policy work; and our staff, structure, and functions.

www.newyorkfed.org/research/research_group/index.html
“Human Capital and Economic Activity in Urban America,” Jaison Abel. NBER Program on Technological Change and Productivity Measurement seminar, Cambridge, Massachusetts, December 5.


“Dollar Funding Costs in the Summer of ’08,” Asani Sarkar. Federal Reserve System Committee Conference on Financial Structure and Regulation, held at the Federal Reserve Bank of Boston, Boston, Massachusetts, October 30.


Research and Statistics Group
Publications and Papers:
October-December 2008

Publications are available at www.newyorkfed.org/research/publication_annuals/index.html.

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