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Oil Prices Shocks and the Macroeconomy: What Has Been Learned Since 1996

by Donald W. Jones (RCF Economic & Financial Consulting Inc, Chicago IL, USA), Paul N. Leiby (Oak Ridge National Laboratory, TN, USA), and Inja K. Paik (Office of Policy and International Affairs, U.S. Department of Energy, Washington, DC, USA)

Abstract

This paper reports on developments in theoretical and empirical understanding of the macroeconomic consequences of oil price shocks since 1996, when the U.S. Department of Energy sponsored a workshop summarizing the state of understanding of the subject. Four major insights stand out. First, theoretical and empirical analyses point to intra- and intersectoral reallocations in response to shocks, generating asymmetric impacts for oil price increases and decreases. Second, the division of responsibility for post-oil-price shock recessions between monetary policy and oil price shocks, has leaned heavily toward oil price shocks. Third, parametric statistical techniques have identified a stable, nonlinear, relationship between oil price shocks and GDP from the late 1940s through the third quarter of 2001. Fourth, the magnitude of effect of an oil price shock on GDP, derived from impulse response functions of oil price shocks in the GDP equation of a VAR, is around -0.05 and -0.06 as an elasticity, spread over two years, where the shock threshold is a price change exceeding a three-year high.

Pages 33-56

Is International Emissions Trading Always Beneficial?

by Mustafa Babiker (Arab Planning Institute, State of Kuwait, and MIT Joint Program on the Science & Policy of Global Change, Cambridge, MA, USA), John Reilly (MIT Joint Program on the Science and Policy of Global Change, Cambridge, MA, USA) and Laurent Viguier (University of Geneva, Switzerland, and MIT Joint Program on the Science & Policy of Global Change)

Abstract

Economic efficiency is a major argument for international emissions trading under the Kyoto Protocol. We show that permit trading can be welfare decreasing for countries, even though private

trading parties benefit. The result is a case of "immiserizing" growth in the sense of Bhagwati where the negative terms of trade and tax interaction effects wipe out the gains from trading. Simulation and welfare decomposition results based on a CGE model of the global economy show that under EU-wide trading countries that are net permit sellers generally lose, due primarily to the existence of distortionary energy taxes.

Pages 57-74

EnronOnline and Informational Efficiency in the U.S. Natural Gas Market

by Donald Murry (C.H. Guernsey & Company, Oklahoma City, OK, USA) and Zhen Zhu (C.H. Guernsey & Company, and Department. of Economics, University of Central Oklahoma, Edmond, OK, USA)

Abstract

We investigate the impact of the introduction and exit of EnronOnline on the efficiency of the U.S. natural gas market. In particular, we examine the natural gas market informational efficiencies by investigating the time-series properties of natural gas prices: changes in natural gas price long-term dependency, comovement of the spot and futures prices, and changes in volatility patterns in the futures prices and spot prices at representative trading hubs. We find evidence that the introduction and demise of EOL coincided with the improvement and worsening in the degree of the market informational efficiency.

Pages 75-96

OPEC's Incentives for Faster Output Growth

by Dermot Gately (Economics Department, New York University, New York, NY, USA)

Abstract

This paper addresses the question of whether OPEC producers are likely to expand their oil output substantially over the next two decades – more than doubling in the Gulf countries by 2020. Such projections, made by the International Energy Agency (IEA) and the U.S. Department of Energy (DOE), are not based on behavioral analysis of Gulf countries' decisions, but are merely the residual demand for OPEC oil – the difference between projected world oil demand and Non-OPEC supply, given some assumed price-path. I employ a simulation model to compare OPEC's payoffs from faster or slower output growth, under various parametric assumptions about the responsiveness of world oil demand and Non-OPEC supply to income and price changes. The payoffs to OPEC are relatively insensitive to faster output growth; aggressive output expansion yields slightly lower payoffs than just maintaining current market share. Analysis of intra-OPEC decisions – between the Core countries and the others – suggests a similar conclusion: these two groups are engaged in a constant-sum game. Thus, the significant increases in OPEC output projected by IEA and DOE are implausible.

Pages 97-113

The Impact of Changes in Crude Oil Prices and Offshore Oil Production on the Economic Performance of U.S. Coastal Gulf States

by Omowumi Iledare and Williams O. Olatubi (Center for Energy Studies, Louisiana State University, Baton Rouge, LA, USA)

Abstract

This paper investigates the effects of changes in crude oil prices and offshore oil and gas production on the economic performance of U.S. Coastal Gulf States—Texas, Louisiana, Alabama and Mississippi. The empirical results do not provide statistical evidence to reject the hypothesis that positive shocks to oil and gas prices and production variation increase the economic performance of these coastal Gulf States. However, the magnitude of the response to changes in prices varies across the states. In addition, the empirical results show significant differences in the duration of the lingering economic effects of price shocks and changes in production among the states. The duration varies depending upon whether the state is a net petroleum exporter or net importer, and whether the state has a diversified economic base or structure.

Pages 115-137

Electricity Intensity in the Commercial Sector: Market and Public Program Effects

by Marvin J. Horowitz (President, Demand Research, Fairfax, Virginia, USA)

Abstract

Publicly-funded energy efficiency programs have grown in number, size, and scope in the past two decades. The focus of many of these programs is the commercial buildings sector, which purchases approximately one-third of all the electricity produced in the United States. Using a fixed effects panel model, this study analyzes commercial sector electricity intensity across 42 states from 1989 to 2001; in aggregate, these states account for between 90 and 95 percent of U.S. commercial sector electricity sales. The analysis separates market effects from public program effects, finding that electric utility demand side management programs were responsible for reducing commercial sector electricity intensity in 2001 by 1.9 percent relative to the 1989 level. Further, rapidly expanding market transformation programs were responsible for reducing electricity intensity in this sector by 5.8 percent relative to the 1989 level. The findings suggest that in 2001 the combined effects of these public programs reduced commercial sector retail electricity sales by 77.1 million MWh, representing about 2.3 percent of total U.S. retail electricity sales.

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BOOK REVIEWS

Oil Politics - A Modern History of Petroleum

by Francisco Parra

I.B. Tauris, 2004

(Book Review by G. Campbell Watkins)

Electricity Pricing in Transition

edited by Ahmad Faruqui and Kelly Eakin

Kluwer Academic Press, 2002

(Book Review by Frank Felder)