

# EIA Storage Announcements, Analyst Storage Forecasts, and Energy Prices

Louis H. Ederington<sup>1</sup>, Fang Lin<sup>2</sup>, Scott C. Linn<sup>3</sup>, and Lisa (Zongfei) Yang<sup>4,5</sup>

Regulators have emphasized timely and accurate information release as an essential channel for reducing information asymmetry and enhancing efficient pricing in energy markets. In this regard, it is well known and documented that energy prices react to the Energy Information Administration's (EIA)'s weekly natural gas and petroleum storage announcements. Given the interest in energy markets by financial investors and institutions and the possible trading profits to those able to correctly anticipate the EIA's storage announcements, it is not surprising that a niche industry has arisen seeking to forecast the EIA's storage figures.

Building on the previous studies documenting the energy price reactions to the EIA's natural gas and crude oil storage announcements, our study explores properties both of the EIA's storage announcements and of analyst forecasts of the EIA storage figures. Specifically, we study how accurate and efficient these analyst forecasts are, how analyst forecasts contribute to price discovery and informational efficiency in energy markets, and how the energy market reaction to the subsequent EIA release depends on characteristics of these analyst forecasts.

We find that analyst storage forecasts bring additional information to the market beyond seasonal patterns and past storage flows and that the market promptly incorporates these analyst forecasts into oil and gas prices prior to the EIA announcements. We further find that the price reaction to subsequent EIA natural gas storage announcements is strongly contingent on the level of analyst forecast uncertainty as proxied by analyst forecast disagreement. Our interpretation of this finding is that when analysts' forecasts differ widely, traders have less confidence in the forecasts so that an announced storage figure which differs from the median forecast is not very surprising leading to a small price reaction. On the other hand, when the various forecasts largely agree there is likely more confidence in the forecast so that the same forecast error is more surprising and thus the price reaction is greater.

Regarding analyst natural gas storage forecasts, we find: (1) the median forecast from Bloomberg is highly accurate (and basically unbiased) anticipating over 99% of the variation in natural gas storage levels, (2) forecast accuracy has improved considerably over the last fifteen or so years (which we conjecture is due to more resources being devoted to information acquisition because of potential trading profits from accurately anticipating the storage figures), and (3) analyst forecast dispersion has also dropped sharply. In contrast, median crude oil storage forecasts, as reported by Bloomberg, are considerably less accurate, tend to underestimate the change in storage levels (in either direction) and have not become more accurate in recent years. However, as with natural gas, crude oil storage forecast dispersion has fallen in recent years.

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<sup>1</sup> Corresponding author, Division of Finance, Michael F. Price College of Business, University of Oklahoma, 205A Adams Hall, Norman, OK 73019, USA. [lederington@ou.edu](mailto:lederington@ou.edu).

<sup>2</sup> Gladys A. Kelce College of Business, Pittsburg State University, 211A Kelce Hall, Pittsburg, KS 66762, USA. [flin@pittstate.edu](mailto:flin@pittstate.edu).

<sup>3</sup> Division of Finance, Michael F. Price College of Business, University of Oklahoma, 253 Adams Hall, Norman, OK 73019, USA. [slinn@ou.edu](mailto:slinn@ou.edu).

<sup>4</sup> Jake Jabs College of Business & Entrepreneurship, Montana State University, Bozeman, MT 59717, USA. [lisayang@montana.edu](mailto:lisayang@montana.edu).

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Storage flows higher or lower than analysts had expected one week tend to be partially reversed the following week indicating that analysts sometimes correctly forecast the direction of storage changes but miss the timing. Analyst forecast dispersion regarding future forecasts increases following large forecast errors suggesting that analysts disagree on the reasons and consequences of the forecast error with some attributing it to temporary causes which are likely to reverse and others attributing the forecast error to more permanent factors which are likely to continue.

Our study thus provides a comprehensive investigation of how analysts' forecasts contribute to price discovery and informational efficiency in both natural gas and crude oil markets. Results from our study shed light on the efficiency and interplay of EIA information releases and professional analyst forecasts and how this interplay impacts energy pricing. Further our results provide guidance for policy-makers seeking to improve the process of government-led information production and dissemination with an eye towards enhancing pricing efficiency in the oil and natural gas markets.

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