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## Price volatility spillovers among agricultural commodity and crude oil markets: Evidence from the range-based estimator

G. Gozgor, C. Memis

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The paper examines the price volatility spillovers among the crude oil, soybeans, corn, wheat, and sugar futures markets over the period 1/1/2006–11/29/2013. We separately investigate the periods of the pre-crisis, the crisis, and the post-crisis in financial markets. We use the Yang-Zhang estimators for the historical volatility and find that there is a volatility sprawl from the crude oil to corn markets. There is also bi-directional causality between the corn and soybeans markets. In addition, we observe significant volatility spillovers from both the soybeans and the corn markets to the wheat markets. The results are also valid in a different sub-period analysis.

**Keywords:**

agricultural commodity market, financial crisis of 2008–2009, futures markets, historical price volatility, intra-day data

**References:**

Andersen T.G. (2000): Some reflections on analysis of high-frequency data. *Journal of Business and Economic Statistics*, 18: 146–153.

Andersen Torben G., Bollerslev Tim, Diebold Francis X., Labys Paul (2003): Modeling and Forecasting Realized Volatility. *Econometrica*, 71, 579-625 <https://doi.org/10.1111/1468-0262.00418>

Bauer Dietmar, Maynard Alex (2012): Persistence-robust surplus-lag Granger causality testing. *Journal of Econometrics*, 169, 293-300 <https://doi.org/10.1016/j.jeconom.2012.01.023>

Chkili Walid, Hammoudeh Shawkat, Nguyen Duc Khuong (2014): Volatility forecasting and risk management for commodity markets in the presence of asymmetry and long memory. *Energy Economics*, 41, 1-18 <https://doi.org/10.1016/j.eneco.2013.10.011>

Chou R.Y., Chou H., Liu N. (2010): Range volatility models and their applications in finance. In: Lee C.F., Lee A.C., Lee J. (eds): *Handbook of Quantitative Finance and Risk Management*. Springer, New York: 1273–1281.

Du Xiaodong, Yu Cindy L., Hayes Dermot J. (2011): Speculation and volatility spillover in the crude oil and agricultural commodity markets: A Bayesian analysis. *Energy Economics*, 33, 497-503 <https://doi.org/10.1016/j.eneco.2010.12.015>

Garman Mark B., Klass Michael J. (1980): On the Estimation of Security Price Volatilities from Historical Data. *The Journal of Business*, 53, 67- <https://doi.org/10.1086/296072>

Gozgor G., Kablamaci B. (2014): The linkage between oil and agricultural commodity prices in the light of the perceived global risk. *Agricultural Economics – Czech*, 60: 332–342.

Harri A., Hudson D. (2009): Mean and variance dynamics between agricultural commodity prices and crude oil prices. In: *The Economics of Alternative Energy Sources and Globalization: The Road Ahead Meeting*. November 15–17, 2009. Orlando.

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Hertel T., Beckma, J. (2012): Commodity price volatility in the biofuel era: An examination of the linkage between energy and agricultural markets. In: Zivin J.S.G., Perloff J.M. (eds): The Intended and Unintended Effects of U.S. Agricultural and Biotechnology Policies. University of Chicago Press, Chicago: 189–221.

Janda K., Kristoufek L., Zilberman D. (2012): Biofuels: Policies and impacts. *Agricultural Economics – Czech*, 58: 372–386.

Jin Q., Fan Y. (2012): How does oil price volatility affect non-energy commodity markets? *Applied Energy*, 89: 273–280.

Kapounek S., Pomenkova J. (2013): The endogeneity of optimum currency area criteria in the context of financial crisis: Evidence from the time-frequency domain analysis. *Agricultural Economics – Czech*, 59: 389–395.

Kristoufek Ladislav (2014): Leverage effect in energy futures. *Energy Economics*, 45, 1-9 <https://doi.org/10.1016/j.eneco.2014.06.009>

Kristoufek Ladislav, Janda Karel, Zilberman David (2012): Correlations between biofuels and related commodities before and during the food crisis: A taxonomy perspective. *Energy Economics*, 34, 1380-1391 <https://doi.org/10.1016/j.eneco.2012.06.016>

Kristoufek Ladislav, Janda Karel, Zilberman David (2013): Regime-dependent topological properties of biofuels networks. *The European Physical Journal B*, 86, - <https://doi.org/10.1140/epjb/e2012-30871-9>

Kristoufek Ladislav, Janda Karel, Zilberman David (2014): Price transmission between biofuels, fuels, and food commodities. *Biofuels, Bioproducts and Biorefining*, 8, 362-373 <https://doi.org/10.1002/bbb.1464>

Natanelov Valeri, McKenzie Andrew M., Van Huylbroeck Guido (2013): Crude oil–corn–ethanol – nexus: A contextual approach. *Energy Policy*, 63, 504-513 <https://doi.org/10.1016/j.enpol.2013.08.026>

Nazlioglu Saban, Erdem Cumhur, Soytaş Ugur (2013): Volatility spillover between oil and agricultural commodity markets. *Energy Economics*, 36, 658-665 <https://doi.org/10.1016/j.eneco.2012.11.009>

Parkinson Michael (1980): The Extreme Value Method for Estimating the Variance of the Rate of Return. *The Journal of Business*, 53, 61- <https://doi.org/10.1086/296071>

Pokrivcak J., Rajcaniova M. (2011): Crude oil price variability and its impact on ethanol prices. *Agricultural Economics – Czech*, 57: 394–403.

Pomenkova J., Marsalek R. (2012): Time and frequency domain in the business cycle structure. *Agricultural Economics – Czech*, 58: 332–346.

Rogers L. C. G., Satchell S. E. (1991): Estimating Variance From High, Low and Closing Prices. *The Annals of Applied Probability*, 1, 504-512 <https://doi.org/10.1214/aoap/1177005835>

Serra Teresa (2013): Time-series econometric analyses of biofuel-related price volatility. *Agricultural Economics*, 44, 53-62 <https://doi.org/10.1111/agec.12050>

Serra Teresa, Zilberman David (2013): Biofuel-related price transmission literature: A review. *Energy Economics*, 37, 141-151 <https://doi.org/10.1016/j.eneco.2013.02.014>

Shu Jinghong, Zhang Jin E. (2006): Testing range estimators of historical volatility. *Journal of Futures Markets*, 26, 297-313 <https://doi.org/10.1002/fut.20197>

Trujillo-Barrera A., Mallory M., Garcia P. (2012): Volatility spillovers in U.S. crude oil, ethanol, and corn futures markets. *Journal of Agricultural and Resource Economics*, 37: 247–262.

Vacha Lukas, Janda Karel, Kristoufek Ladislav, Zilberman David (2013): Time–frequency dynamics of biofuel–fuel–food system. *Energy Economics*, 40, 233-241 <https://doi.org/10.1016/j.eneco.2013.06.015>

Wu Feng, Guan Zhengfei, Myers Robert J. (2011): Volatility spillover effects and cross hedging in corn and crude oil futures. *Journal of Futures Markets*, 31, 1052-1075 <https://doi.org/10.1002/fut.20499>

Yang Dennis, Zhang Qiang (2000): Drift Independent Volatility Estimation Based on High, Low, Open, and Close Prices. *The Journal of Business*, 73, 477-492 <https://doi.org/10.1086/209650>

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