



The Effects of Margin Changes on Commodity Futures Markets

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In light of the 2010 Dodd–Frank Act, this paper assesses the effect of margin changes on prices, the risk-sharing between speculators and hedgers, and the price stability of 20 commodity futures markets. It provides evidence that margin increases decrease the rate at which prices change, yet they impair the risk-sharing function and they decrease market liquidity in certain markets. The regulator should set margins by taking the heterogeneity of commodity futures markets into account. Certain effects of margin changes diffuse across related markets though. The effect of margin changes is more pronounced in commodity futures markets than in major equity and interest rate futures markets.

Introduction

Traditionally, futures exchanges use margins as a risk management tool; they are a payment that serves as a collateral deposit to eliminate credit risk. Until recently, futures exchanges had the discretion to set and change margin rules. However, the 2003–2008 commodity boom revived a long-standing debate on whether margin requirements should be regulated so that they can also be used as a policy tool to restrict speculation and drive commodity prices down. The 2010 *Dodd–Frank Wall Street Reform and Consumer Protection Act* gave authority to the U.S. Commodity Futures Trading Commission (CFTC) to establish margin requirements so as to protect the financial integrity of futures markets. So far, the CFTC has not exercised this authority. This paper comprehensively investigates the effect of margin changes on (1) commodity futures prices/returns, (2) the sharing of risk between speculators and hedgers, (3) commodity futures price stability, and on (4) the interaction between various commodity market characteristics.

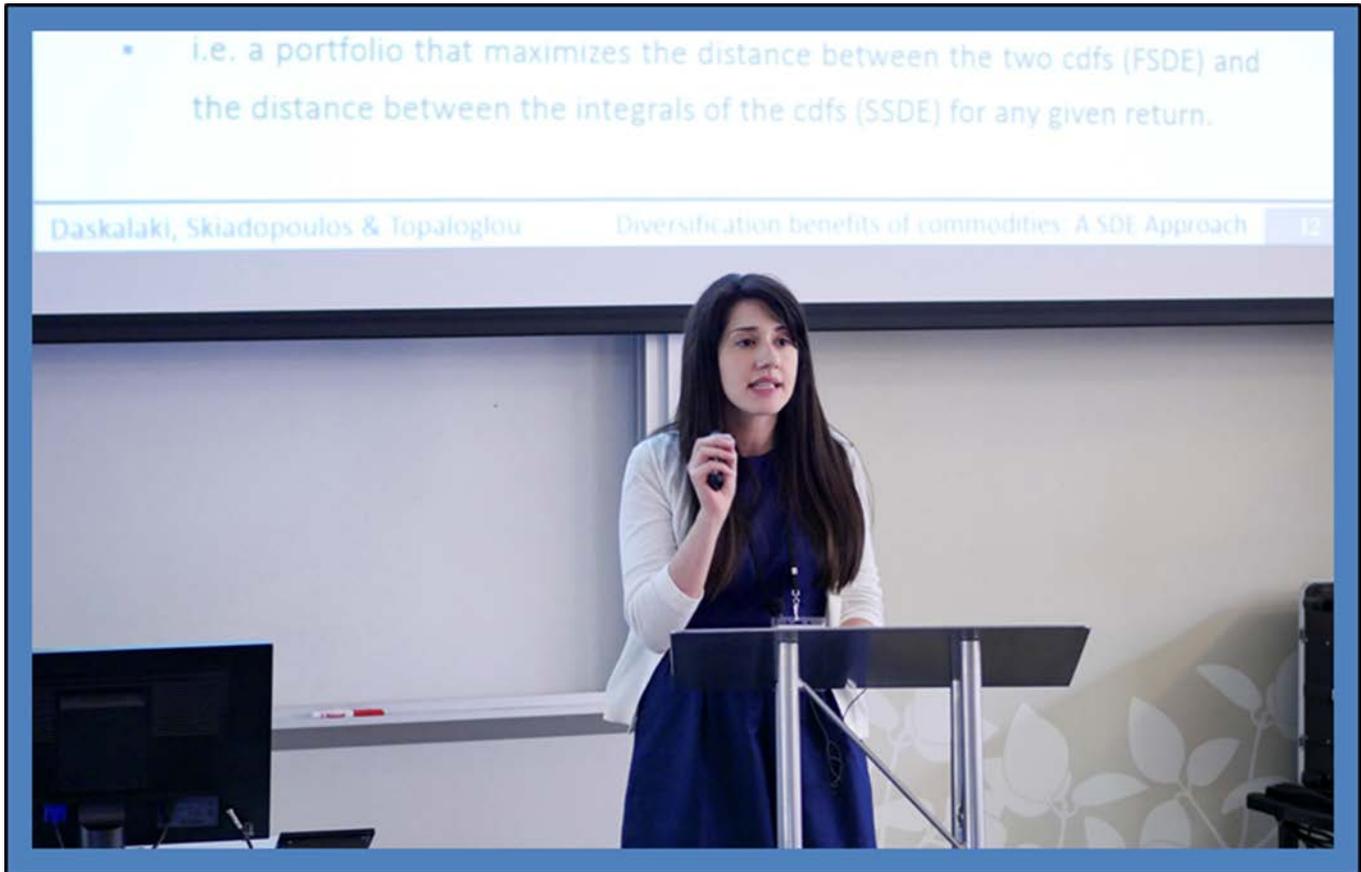
Why the Paper’s Research Question is Important

The study of the effect of margin changes on the above features of commodity markets is of interest to academics, investors and regulators for at least three reasons. First, it stands in the core of the historically ongoing debate about whether margins should be regulated. Second, it tests the predictions of the theoretical literature on the effect of funding constraints on financial markets (see e.g. Gromb and Vayanos, 2002; Brunnermeier and Pedersen, 2009; Gârleanu and Pedersen, 2011; Acharya *et al.*, 2013). In the case where investors face funding constraints, margin increases make these constraints tighter, forcing investors to close their positions. Hence, margin changes may affect market liquidity and in turn

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influence price, volatility and risk-sharing. Third, the commodity futures market is a natural setting to explore the effects of margin changes because historical data on margins are available.



Charoula Daskalaki, Ph.D., Assistant Professor, Department of Economics, University of Crete, Greece, presenting at the J.P. Morgan Center for Commodities' international commodities symposium, which was held at the University of Colorado Denver Business School from August 10, 2017 through August 11, 2017. She presented her jointly written paper, "[Diversification Benefits of Commodities: A Stochastic Dominance Efficiency Approach](#)," which was also a [CME Group Foundation Research Fellowship winner](#). Dr. Daskalaki is the co-author of another commodities research paper that is summarized here by Professor Ana-Maria Fuertes, Ph.D., of Cass Business School (U.K.)

Data Description

The authors collect data on maintenance margins for twenty individual commodity futures contracts, two equity futures contracts and two interest rate futures contracts. The employed commodity contracts span the five main commodity categories (energy, metals, grains, softs, and livestock). They consider the S&P 500 and the Nasdaq futures contracts for the case of equity futures market and the 5-year and the 10-year U.S. Treasury Notes for the case of the interest rate futures market. The choice of these contracts is based on their popularity and the availability of a sufficient number of margin changes to conduct their analysis. They obtain data on margins from the Chicago Mercantile Exchange (CME) Group and the Intercontinental Exchange (ICE) where the relevant futures contracts trade. The sample is unbalanced, namely, the starting date and the number of margin changes vary across commodities.



The sample period incorporates bull and bear regimes in commodity prices as well as the 2003-2008 commodity boom period and the 2007-2009 financial crisis. The authors also obtain data on the daily open interest and volume as well as data on the daily ask, bid, closing, opening, high, and low futures prices for individual futures contracts from Bloomberg. Finally, they use the data on the reportable (large) traders' positions reported by the CFTC on a weekly basis.

Description of Investigation

To assess the impact of margin changes on the variables of interest, the authors apply the event study methodology. They isolate the days where a margin change for each individual futures contract has occurred and examine the impact on a number of features of the commodity futures market around these days. They consider a short and a long pre-event and post-event period. They examine the variables of interest over a pre-event period comprising the last five (or twenty) trading days immediately before the margin change and a post-event period comprising the five (or twenty) trading days immediately after the margin change. Note that margin changes may be announced by futures exchanges 24 hours in advance of the actual margin change. Hence, the event study is not subject to an early announcement effect on the considered variables because the pre-event window spans a longer interval of time. Finally, the authors investigate the impact of margin changes, both on individual commodity futures contracts as well as on distinct groups including contracts that belong in the same sector.

Results

First, the authors find that margin increases do not decrease commodity prices as commonly believed but they do act as a 'brake' on the rate at which prices increase. Second, they find that while regulation of margins will likely constrain excessive speculation, such measures may also impair significantly market liquidity and the risk-sharing function by forcing hedgers out of the market. Third, their findings suggest that if a regulator is to introduce controls on margins, then the individual characteristics and features of each market sector must be considered. For instance, the effect of margin changes on the risk-sharing mechanism of the energy market differs from that in the agricultural or metal markets. Finally, margin increases may have irreversible consequences that may also differ across commodity markets. Once margins are increased, a margin decrease of the same magnitude will not restore the market to its previous state. In addition, they find that margin changes for futures on a specific type of commodity (say energy) will also affect the features of futures on other commodity categories (say metals). This can be attributed to the fact that commodity traders take simultaneous positions in various commodity markets. Hence, when they liquidate positions in one commodity market, this impacts their positioning in other commodity markets.

Conclusions

This study provides empirical evidence to argue that the regulation of commodity futures margins has pros and cons. Policymakers should take into account the fact that the effect of margin changes varies across commodity groups, and they should be very cautious before implementing any margin changes because the consequences may be irreversible. Their findings are in line with the contention of Alan



Greenspan (1996), former Chairman of the U.S. Federal Reserve: “I guarantee you that if you want to get rid of the bubble, whatever it is, that [raising margin requirements] will do it. My concern is that I am not sure what else it will do.”

Endnotes

This commodity research paper is also included in the J.P. Morgan Center for Commodities’ *Global Commodity Issues eJournal*. The [author](#) of this digest article is a member of the Editorial Advisory Board (EAB) of the *Global Commodity Applied Research Digest (GCARD)*. The GCARD’s EAB membership is listed here: <http://jpmcc-gcard.com/editorial-advisory-board/>.

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Keywords

Commodity futures, margin.