

Has financialization changed the impact of macroeconomic announcements?

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Abstract

We investigate, using high-frequency data, how financialization has changed the impact of macroeconomic announcements on commodity futures returns and volatility. We find that greater financialization dampens the impact of macroeconomic release surprises on commodity markets, as measured by price drift and volatility changes. Moreover, financial participants improve liquidity and price discovery, while reducing volatility. Since traditional market participants prefer stability, our results suggest a beneficial impact of financialization. When we disaggregate the results, we find that the beneficial effects of greater financial participation are linked to money managers rather than swap dealers.

Keywords: commodities, energy, futures, information diffusion, financialization, high-frequency, speculation, sustainable, commercial, institutional, volatility, macro, announcements, surprise, events.

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1 Introduction

Despite investment outflows in 2009 and 2014-2016,¹ commodities remain a popular asset class among non-traditional market participants such as hedge funds and index traders. Indeed, 2022 may be a record year for commodity trading profit.² The financialization of commodities refers to important market and regulatory changes that have affected how commodities (futures, options, swaps and physicals) are traded by institutional and other non-traditional investors. Financialization is controversial: Testimony given by [Masters \(2009\)](#) to the Commodities Futures Trading Commission (CFTC) argued that institutional investors disrupted commodity markets in the mid-2000s through the use of strategies intended for financial securities.³ This paper investigates financialization in commodity markets through the lens of macroeconomic announcement releases.

Commodity financialization has coincided with a commodity bull cycle ([Humphreys, 2010](#)), during which traditional market participants (i.e., those who produce or process the commodity) expressed fears that prices would be distorted from their fundamental values and that volatility increases would make hedging more costly. Research has found that increases in speculation and long-only index positions in commodity markets are linked to increases in volatility and correlations between commodities.⁴ Theory suggests that financialization could affect commodity futures markets through risk sharing and information discovery ([Cheng and Xiong, 2014](#)). Indeed, investors can either provide liquidity to meet the hedging needs of other traders or consume liquidity when they trade for their own needs ([Kang, Rouwenhorst, and Tang, 2020](#)), thereby influencing liquidity risk. In addition, price discovery in commodity markets is affected by informational frictions concerning supply, demand and inventories. Price discovery tends to occur on

¹These outflows are explained by the Great Recession and a global commodity slump, respectively.

²See, for example, the Wall Street Journal, September 9th 2022, “Wall Street’s Commodity Traders on Track to Break Profit Records”.

³As we explain later, however, this claim has been challenged by empirical research ([Irwin and Sanders, 2011, 2012b,a](#)).

⁴Helpful surveys of this large literature include [Boyd et al. \(2018\)](#) and [Cheng and Xiong \(2014\)](#).

futures markets, as spot or cash markets are more decentralized ([Garbade and Silber, 1983](#)). Since new players in commodities mostly take positions in derivatives rather than physicals, financialization could alter how these markets incorporate new information. This paper shows that we can assess the impact of financialization by measuring how information discovery is affected by the arrival of new players in commodity markets.

To investigate how financialization affects commodities, we analyze how prices and variance change in response to unexpected macroeconomic news. We use high frequency data ranging from April 2nd, 2007 to October 31st, 2023, and a methodology similar to [Andersen, Bollerslev, Diebold, and Vega \(2007\)](#) and [Kurov, Sancetta, Strasser, and Wolfe \(2019\)](#). We focus on six major commodity futures. Using intraday data allows us to more accurately measure the effect of news on volatility and returns. Moreover, we avoid a common criticism of event study methods, namely that daily frequency data may attribute the effect of an announcement to another, concurrent market event (see e.g., [Kothari and Warner, 2007](#)). To achieve this objective, we construct financialization indices based on the definition given in the literature. These measures allow us to assess financialization, taking into account the role of speculation and the intensity of trade. We also provide a sub-periodic analysis documenting the stability of our result during periods of financial crisis and zero lower bound. We also shed light on the structure of the commodities market by breaking down the impact of several market players: commercial and non-commercial (swap dealers and fund managers).

Our first contribution is to present new insights on financialization by bridging this line of research with the macro announcements literature. The announcements literature has shifted from using daily data to high-frequency data and has examined a variety of markets such as bonds ([Andersen et al., 2007](#); [Hu et al., 2013](#); [Balduzzi et al., 2001](#); [Lee et al., 1995](#); [Hautsch et al., 2011](#); [Kurov et al., 2019](#)), stocks ([Andersen et al., 2007](#); [Bernile et al., 2016](#); [Kurov et al., 2019](#)) and foreign exchange rates ([Lee et al., 1995](#); [Andersen et al., 2003](#)). However, the use of high-frequency data is less common in commodity futures

research (Couleau et al., 2020). We argue that the literature’s use of a lower sampling frequency for futures price returns could help explain why there is no consensus as to the impact on volatility (Tang and Xiong, 2012; Brunetti, Büyükşahin, and Harris, 2016; Irwin and Sanders, 2012b; Stoll and Whaley, 2010; Alquist and Gervais, 2013). Indeed, the use of daily or weekly data results in a smaller sample size and reduces the power of statistical tests (Irwin, Sanders, and Merrin, 2009).

In so doing, our paper also builds on the literature on information transmission in markets. Goldstein and Yang (2022) develop a theory of how financial participants in commodity markets affect futures price informativeness, bias, and comovement. Their model predicts that financialization, defined here as increasing the number of speculators relative to hedgers in a market, initially improves price efficiency but eventually makes it worse. Our results further contribute to research on the impact of institutional investors. For instance, Brunetti, Büyükşahin, and Harris (2016) find that hedge funds add liquidity to commodity markets, resulting in more efficient prices, while merchant positions are linked to greater volatility in crude oil and natural gas markets.

Our second contribution is to provide disaggregated results, where fund managers and swap dealers are analyzed separately, and to consider more informative measures of financialization than what is typically used. Prior studies often split the sample into pre- and post-financialization periods, using 2004⁵ as the break point.⁶ Instead, we use several measures to let financialization be time-varying and commodity-specific. Overall, our research sheds new light on the resolution of uncertainty, market efficiency and information transmission, and the anticipation of macroeconomic announcements.

We summarize our findings as follows: First, financialization contributes to information diffusion and price discovery. The impact of a surprise following a macroeconomic announcement is generally dampened when a commodity is more financialized. Thus,

⁵Although the Commodity Futures Trading Commission passed the Commodity Futures Modernization Act in 2000, the literature generally agrees that 2004 marks the beginning of financialization.

⁶Some examples include Büyükşahin and Robe (2010); Kilian and Murphy (2014); Brunetti et al. (2016); Irwin and Sanders (2012a); Stoll and Whaley (2010); Alquist and Gervais (2013).

it appears that commodity markets are better informed since macro news generate less of a shock. This outcome should benefit traditional commodity market participants. The dampening effect we find is stronger for pro-cyclical commodities such as crude oil or natural gas than for gold, which is a safe haven asset.

Second, we find that money managers reduce volatility and contribute more to price discovery when there is a macro announcement. This result is consistent with the idea that money managers are more informed investors, given their role in the market ([Fishe and Smith, 2012](#)). In contrast, swap dealers also contribute to price discovery but are linked to increases in volatility after macro announcements. If we aggregate all trader categories, financialization seems to reduce volatility in commodity markets. Robustness checks show that our main findings are unchanged if we consider alternative volatility estimators, different econometric specifications, or if we change the financialization proxy. Thus, our results suggest that financialization is helpful to commodity markets.

The paper's implications on financialization go beyond the efficiency of commodity markets. With the ongoing shift towards green energy, how might financialization affect the growth of sustainable energy markets? If financialization means less volatile commodity and energy markets, we could see increased investment in the green energy transition.⁷ Beyond the energy sector, demand has grown for the metals and minerals needed to build a renewable energy infrastructure ([Knuth, 2018](#)). By broadening the investor base, financialization could play a role in creating more sustainable, affordable and accessible raw energy markets.

⁷This follows from real options theory, as higher volatility discourages investment by increasing the value of waiting to invest ([Kellogg, 2014](#)).

2 Literature Review

2.1 Financialization of commodities

[Basak and Pavlova \(2016\)](#) develop a model which predicts that financialization will: (i) increase commodity futures prices, especially for futures that belong to the commodity index; (ii) increase volatility for both index and non-index futures; (iii) increase correlations between commodities and with equities; and (iv) only affect prices of storable commodities (e.g., wheat, crude oil). Empirical evidence on their predictions is, however, inconclusive. Table 1 presents a summary of research findings on the impact of financialization and speculation on commodity prices and volatility.⁸

[Tang and Xiong \(2012\)](#) report increases in the correlations of crude oil and non-energy commodity returns, which they claim are due to the rapid growth of index investments in commodity markets. They argue that when a commodity is included in a benchmark index, its price is no longer determined solely by the commodity's own supply and demand, but also by other commodities and assets in the index. [Singleton \(2014b\)](#) further shows that speculative activity by financial investors creates informational frictions, leading commodity prices to diverge from their fundamental value. This result implies that financialization would increase volatility. In a similar vein, [Yang, Balyeat, and Leatham \(2005\)](#) show that when commodity futures trading volume increases, so does the volatility of commodity spot prices.

Another line of research, however, finds no evidence that financialization is responsible for distorted prices or higher volatility. [Brunetti and Reiffen \(2014\)](#) use an equilibrium model and data on commodity trader positions to show that index traders provide insurance against price risk. [Brunetti, Büyüksahin, and Harris \(2016\)](#) analyze the impact of particular types of speculators in commodity markets from 2005 to 2009. They find that hedge funds allow for a faster and more efficient price discovery, resulting in a lower

⁸Note that we use a broader definition of financialization than what some authors use. In particular, we do not limit our analysis strictly to the impact of index traders.

volatility. Furthermore, they find that the positions of swap dealers are not correlated with contemporaneous returns and volatility in commodity markets. [Stoll and Whaley \(2010\)](#) show that inflows and outflows from commodity index investments do not Granger-cause price or volatility changes. Using a no-arbitrage argument, [Hamilton and Wu \(2014\)](#) show that the positions of commodity traders included in index funds cannot be used to achieve excess returns in futures markets. In addition, [Kilian and Murphy \(2014\)](#) show that several speculative trades can occur in the oil market without seeing a significant change in inventory levels. This would seem to rule out speculation as being responsible for the boom and bust cycle in the oil market between 2003 and 2008.

2.2 Macroeconomic announcements

2.2.1 Macro announcements and financial markets

A large empirical literature documents the impact of macroeconomic announcements on stocks ([Scholtus, Van Dijk, and Frijns, 2014](#)) and bonds ([Fleming and Remolona, 1997, 1999](#)). This research is distinct from, but complementary to, a large body of work on informed trading and corporate announcements such as dividend changes ([Zhang, 2018](#)). In a key study, [Balduzzi, Elton, and Green \(2001\)](#) investigate the effects of scheduled macro announcements on prices, trading volume, and bid-ask spreads. They find that 17 public news releases have a significant impact on the prices of the three-month bill, the two-year and 10-year notes and a 30-year bond. There is a persistent and significant increase in volatility and trade volume following a macro announcement. The literature also looks at whether economic conditions can explain heterogeneous responses to announcements across business cycles. [Andersen et al. \(2003\)](#) find that the stock market reacts to news differently depending on the stage of the business cycle. [Boyd, Hu, and Jagannathan \(2005\)](#) show that the impact of unemployment-related announcements varies according to the economic environment.

2.2.2 Macro announcements and commodity markets

Much of the literature on announcements and commodity markets concerns production and inventory updates from the Organization of Petroleum Exporting Countries (OPEC). Evidence on the impact of OPEC news on prices is mixed ([Pescatori and Nazer, 2022](#); [Lin and Tamvakis, 2010](#)). While some research suggests a short-run impact on crude oil prices and volatility, OPEC's influence has weakened since the oil glut in the 1980s ([Zorn, 1983](#)). [Horan, Peterson, and Mahar \(2004\)](#) find that volatility drifts upward as OPEC meetings draw nearer and decreases in the first five days after the meetings start. [Wirl and Kujundzic \(2004\)](#) find little market reaction to fifty OPEC meetings from 1984 to 2001. [Kilian and Vega \(2011\)](#) find no significant responses in regressions of WTI crude oil and U.S. gasoline prices on 30 U.S. macro announcements from 1983 to 2008. [Gu and Kurov \(2018\)](#) study the pre-announcement price drift in natural gas and show that inventory surprises can be predicted using the difference between the median analyst forecast (historically highly accurate) and the consensus forecast. As the lack of conclusive results in this area may be due to using daily data, we propose using high-frequency return data.

A smaller literature looks at how commodities react to macro announcements, also generally using daily data. [Frankel and Hardouvelis \(1985\)](#) find that a positive shock in the money supply lowers gold prices. [Christie-David, Chaudhry, and Koch \(2000\)](#) study how gold and silver futures prices react, over 15-minute intervals, to 23 U.S. macro announcements over 1992-1995 and find that volatility is higher on announcement days. [Cai, Cheung, and Wong \(2001\)](#) analyze five-minute gold price returns around macro announcements using GARCH models. They find that intraday price impacts of announcements are fewer and less significant for gold than for bonds or currencies. Similarly, [Hess, Huang, and Niessen \(2008\)](#) find that CRB and Goldman Sachs commodity indexes are less sensitive to the impact of 17 U.S. macro announcements than are bonds or stocks. [Hollstein, Prokopczuk, and Würsig \(2020\)](#) look at how different economic variables affect the term structure of commodity futures volatility. They show that speculation and

jobs-related macro variables have the largest impact on volatility. Lastly, [Ye, Guo, Deschamps, Jiang, and Liu \(2021\)](#) find that volatility in commodity futures is more affected by macroeconomic forecasts than by current economic conditions.

So far, the literature shows a clear impact of macroeconomic announcements on stock and bond prices. However, there does not seem to be a clear answer to whether announcements affect commodity futures prices. Our research provides new insights by i) using high frequency data, ii) expanding the set of announcements beyond those which are normally analyzed (such as OPEC meetings) and iii) considering different variables to quantify the level of financialization for each of the commodities in the sample.

3 Data

3.1 Data on macroeconomic announcements

The macroeconomic announcement release data are obtained from Bloomberg and Refinitiv Eikon. We collect information on 22 important announcements that are standard to the literature (see e.g., [Andersen and Bollerslev, 1998](#); [Kurov et al., 2019](#)). The announcements can be broken down into ten categories: Income, Employment, Industrial Activity, Investment, Consumption, Housing Sector, Government, Net Exports, Inflation and Forward-looking. The majority of the announcements are released on a monthly basis. However, there are some exceptions which have a quarterly or weekly frequency of release. [Table 2](#) summarizes the announcements and provides details including number of observations, release frequency, source, unit of measure, and time of release. Bloomberg provides analyst forecasts for all macroeconomic announcements, as well as the actual value of the announcement release (see e.g., [Kurov et al., 2019](#)).

In addition to macroeconomic announcements, we consider energy sector-specific announcements published by the U.S. Energy Information Administration. The first is the weekly crude oil storage report, which provides an update on the quantity of crude oil

held in storage in the U.S. This report can have a significant impact on oil prices, as it provides insights into a buffer that affects the supply and demand equilibrium for crude oil. The second is the weekly natural gas storage report, which provides similar information for natural gas held in storage. As these reports are closely watched by energy sector traders, they can generate market movements. We do not include OPEC announcements, as they cannot be reliably used in a high-frequency econometric design (Känzig, 2021).⁹

In this literature, it is common practice to use the standardized surprise of an announcement rather than its realized value to quantify the unexpected component of the release. To calculate announcement surprises, we follow Balduzzi, Elton, and Green (2001) as a starting point. Let A_{kt} be the realized value (i.e., release) of macroeconomic announcement k at time t , and let E_{kt} be the median value of all Bloomberg analyst forecasts for announcement k at time t . To standardize the surprise, we divide the raw surprise ($A_{kt} - E_{kt}$) by σ_k , the sample standard deviation of the surprise for announcement k . Thus, equation (1) describes the standardized surprise for announcement k at time t :

$$S_{kt} = \frac{A_{kt} - E_{kt}}{\sigma_k} \quad (1)$$

As in Balduzzi et al. (2001) and Kurov et al. (2019), the full sample period is used to compute σ_k .¹⁰ For robustness, we also estimate our models using surprises where σ_k is computed using only past observations. The main findings are unchanged.¹¹ Thus, we report regression results based on the most standard methodology in the literature.

Our sample for macroeconomic announcements is matched to our high-frequency data and therefore runs from April 2nd, 2007 to October 31st, 2023. The data for all

⁹There are two issues with the OPEC announcements: First, they are not released at a specific time, and second, it is impossible to know precisely when a given OPEC announcement was made available to investors.

¹⁰The literature argues that measuring σ_k in this manner is reasonable because the standardized surprise is not used for forecasting purposes. This approach is also used in Scotti (2016), Andersen et al. (2003), and Goldberg and Grisse (2013). Using raw surprises is not recommended due to scaling issues, nor is using analyst dispersion for σ_k because announcement coverage sometimes involves only a few analysts.

¹¹In this case, we exclude the first M observations (e.g., $M = 10$) to get a reasonable sample size for σ_k .

announcements in our study can be obtained from their respective government organizations, as shown in Table 2. Table 3 presents the minimum, 1st quartile, median, mean, 3rd quartile and maximum of the surprise for each announcement. As expected, the standardized surprises are centered on zero. For some announcements, the range is roughly from -3 to 3, but in many cases the outliers display asymmetry. For instance, the Initial Jobless Claims maximum value (20.746) is much larger than the minimum (-3.117) while conversely, Consumer Credit and Personal Consumption show larger negative than positive outliers.

3.2 Commodity futures price data

For intraday data on commodity futures prices, we use Barchart’s API.¹² Our dataset for prices contains some of the most economically significant commodity futures contracts traded in the U.S. We use a high frequency price series that runs from April 2nd, 2007 to October 31st, 2023. Among these contracts, crude oil and natural gas have a pro-cyclical behavior, while gold and silver behave as a safe haven. High-grade copper and palladium are industrial metals and are used in the manufacturing of consumer products.

For each of the commodities in our sample, price returns R_t are calculated as the log return over a period of 5 minutes ($\tau = 5$) beginning at time t . For each 5-minute interval, the database provides the futures contract close price (p_t^{close}) of each 5 minutes periods. Thus, R_t is obtained as in equation (2):

$$R_t^{t+\tau} = \ln \left(\frac{p_{t+\tau}^{close}}{p_t^{close}} \right) = \ln(p_{t+\tau}^{close}) - \ln(p_t^{close}) \quad (2)$$

Descriptive statistics for the 5-minute log returns are presented in table 5. In one of our robustness checks, we confirm that the main findings are robust to using different window lengths. To this end, we estimate equation 2 using 30-minute returns. The most

¹²See the <https://www.barchart.com/futures> website.

extreme outlier observations belong to crude oil, while gold has the fewest extreme outliers. Moreover, natural gas is more volatile than other commodities.

3.3 Measures of commodity financialization and categories of traders

We argue that financialization is greater when speculative activities increase relative to productive activity. To measure the impact of financialization, we need a measure that captures the intensity of speculation in commodity markets. The indexes we use are constructed using data in the *Commitment of Traders (COT) Report* published weekly by the Commodity Futures Trading Commission (CFTC). The data provided by the CFTC relates to the number of positions held by different types of participants in commodity markets. The data on money manager and swap dealer positions are obtained from Quandl's API¹³. The CFTC separates trader types as follows:¹⁴

1. **Commercial:** We classify as commercial all trader reported futures positions for a given commodity if the trader claims to use futures contracts in that commodity for purposes of hedging;
2. **Non-Commercial:** This value is obtained by subtracting total long and short commercial positions from total open interest.

The following information on commodity futures contracts is presented in the CoT report and is used to compute financialization measures:

- SS_i : the number of short positions in futures i held by Non-Commercial traders,

¹³See the <https://data.nasdaq.com/data/CFTC-commodity-futures-trading-commission-reports> website.

¹⁴The CFTC defines commercial traders as participants in commodity markets who primarily use futures contracts to hedge their business activities (e.g., buying or selling commodities). All traders who are not classified as Commercial are automatically classified as Non-Commercial traders. To obtain the number of long positions held by Non-Commercial traders, we subtract the total long Commercial Positions from the total open interest. For the number of short positions held by Non-Commercial traders, we subtract the total short Commercial Positions from the total open interest.

- SL_i : the number of long positions in futures i held by Non-Commercial traders,
- HS_i : the number of short positions in futures i held by Commercial traders,
- HL_i : the number of long positions in futures i held by Commercial traders.

3.3.1 Working's T

The first proxy we consider to compare levels of speculative and hedging activity is due to [Working \(1960\)](#).¹⁵ This index compares the activity levels of Non-Commercial commodity futures traders (e.g., speculators) to those of Commercial traders (e.g., hedgers). Typically, Commercial traders take short positions in futures contracts while Non-Commercial traders take long positions. This proxy measures the extent to which speculation exceeds the level required to offset any unbalanced hedging at the market clearing price. For robustness, we present below two alternative measures of financialization which we also use in the empirical analysis. The Working's T index, WT_i , is computed as follows:

$$WT_i = \begin{cases} 1 + \frac{SS_i}{HL_i + HS_i} & \text{if } HS_i \geq HL_i \\ 1 + \frac{SL_i}{HL_i + HS_i} & \text{if } HS_i < HL_i \end{cases} \quad (3)$$

3.3.2 Market share of Non-Commercials (MSCT)

Instead of Working's T , [Büyükoşahin and Robe \(2014\)](#) suggest a measure of commodity financialization that emphasizes the market share of Non-Commercial traders (MSCT). This ratio is expressed as the sum of the short and long positions of Non-Commercial traders over twice the total open interest in a given market:

$$MSCT_i = \frac{SL_i + SS_i}{2 \times OI_i} \quad (4)$$

¹⁵[Shanker \(2017\)](#) provides an updated definition of Working's T .

3.3.3 Net Long Short (NLS)

A further alternative suggested by [Hedegaard \(2011\)](#) is to define an index of speculative activity as the ratio of net long speculative positions over total open interest (NLS_i),

$$NLS_i = \frac{SL_i - SS_i}{OI_i} \quad (5)$$

Using disaggregate data from the CFTC, we compute the NLS index using Money Manager and Swap Dealer Position.

Definition of Money Manager

Money managers in commodity markets typically refer to non-commercial market participants who are involved in managing funds and investing in commodity futures and options markets. [Zhang \(2022\)](#)¹⁶ They often interact with swap dealers and other commercial actors to provide liquidity in these markets [Zhang \(2022\)](#). Their activities are influenced by various factors such as speculative activity, imperfect information about real economic activity as well as supply, demand, and inventory accumulation in commodity markets ([Singleton, 2014a](#)).

Definition of Swap Dealer

Swap dealers in commodity markets are dealers and market makers in the swap market. They typically use futures contracts to hedge risk generated by their swap positions. In doing so, they contribute to price discovery and liquidity ([Brunetti et al., 2016](#)). The role of swap dealers has been studied in relation to index investments, as their positions are distinct from those of other market participants ([Sanders and Irwin, 2016](#)).

¹⁶The CFTC writes that they are “registered commodity trading advisor (CTA); a registered commodity pool operator (CPO); or an unregistered fund identified by CFTC.”.

3.3.4 Descriptive Statistics

Descriptive statistics for the three financialization variables are shown in table 6. These proxies are computed separately for each of the six commodities in our sample, based on the number of open positions for a given futures contract. The variables themselves are scale-free, unlike the number of open positions. The MSCT variable fluctuates between 0 and 0.5, while NLS varies between -0.4 and 0.8, and Working's T between 1 and 2. Time series plots of MSCT, NLS and Working's T are shown in figures 1, 2 and 3, respectively, for each of the six commodity futures in our sample.

4 Econometric framework and methods

4.1 Modeling the impact on returns

Our regression models are based on Kurov et al. (2019) and Andersen et al. (2007). We run the regressions using two different specifications of equation (6):

$$R_t^{t+\tau} = \alpha + \sum_{m=1}^{22} \gamma_m S_{m,t} + \delta X_{t,i} + \sum_{m=1}^{22} \theta_m (S_{m,t} \cdot X_t) + \beta R_{t-\tau}^t + \epsilon_t \quad (6)$$

where $R_t^{t+\tau}$ denotes the continuously compounded futures return from time t and $t + \tau$, S_{mt} denotes the surprise for macroeconomic announcement m published at time t . $X_{t,i}$ is the financialization proxy for commodity i measured at time t . There are three possible values for $X_{t,i}$ depending on which proxy is used: $MSCT_i$, NLS_i and WT_i . We estimate the regression using a two-step weighted least squares procedure.

4.1.1 Approach based on Kurov, Sancetta, Strasser, and Wolfe (2019)

Next, we estimate equation (6) using the approach shown in Kurov et al. (2019). To account for heteroskedasticity, we construct a volatility estimate by means of an exponential moving average, using the regression residuals obtained in the first step. This auxiliary

regression is shown in equation (7), with a smoothing parameter $\alpha = 0.9$ and a starting parameter value set to $\sigma_1 = \epsilon_t$:

$$\sigma_t = \alpha\sigma_{t-1} + (1 - \alpha) |\epsilon_t| \quad (7)$$

After obtaining σ_t for each observation, we transform it using $w_t = \hat{\sigma}_t^{-2}$ to obtain the WLS regression weight. As with the previous regression equation, we complete this step by multiplying each variable by w_t and running an OLS regression to estimate the model.

4.1.2 Approach based on Andersen, Bollerslev, Diebold, and Vega (2007)

The first approach follows Andersen et al. (2007) and estimates equation (6) by OLS. Then, we regress the model's residuals in absolute value on the macro variables and 23 time-of-the-day dichotomous variables. This auxiliary regression is shown by equation (8):

$$|\epsilon_t| = \rho + \sum_{m=1}^{22} \zeta_m S_{m,t} + \sum_{h=1}^{23} \delta_h D^h \quad (8)$$

After estimating the model, we use the fitted value of the residuals from eq. (8) to obtain the WLS regression weight $w_t = \hat{\epsilon}_t^{-2}$. Then, we multiply each left- and right-hand side variable in our original model by w_t and estimate the model once more by OLS.

The impact of macro announcements on commodity futures returns can be assessed by looking at the significance of the γ_m coefficient in the mean equation. As for the impact of financialization on commodity futures returns, we test the significance of the δ coefficient. Finally, we look at the sign and significance of θ_m to assess the impact of time-varying financialization on the size of the post-macro announcement drift. This last coefficient is the most important one to help answer our main research question.

4.2 Modeling the impact on volatility

As volatility is unobservable, different volatility estimators have been provided by the literature. Using a GARCH specification is justified by the time-varying and clustered volatility of commodity price returns (see e.g., [Hammoudeh and Yuan, 2008](#)). To quantify the relationship between commodity price volatility and financialization, we use a GARCH (1,1) model, and extend the volatility equation by including our financialization variable and the macroeconomic surprise variables. Estimating the GARCH model is done in two steps. First, we estimate the mean equation equation (9):

$$R_t^{t+\tau} = \alpha + \sum_{m=1}^{22} \gamma_m S_{m,t} + \beta R_{t,-\tau}^t + \epsilon_t \quad (9)$$

Then, we estimate the following equation for conditional variance:

$$\sigma_t^2 = \alpha_0 + \alpha_1 \sigma_{t-1}^2 + \alpha_2 \epsilon_t^2 + \sum_{m=1}^{22} \Phi_m D_{m,t} + \beta X_{i,t} + \sum_{k=1}^n \phi_k I_{k,t} + \sum_{h=1}^{23} \rho_h D_h \quad (10)$$

where $I_{k,t} = D_{m,t} \cdot X_{i,t}$ and $D_{m,t}$ is a dummy variable for macro announcement m . The latter equals 1 if an announcement takes place at time t and equals 0 otherwise. $X_{i,t}$ is the financialization variable i at time t . The coefficient ρ_h captures intraday periodicity, with the dummy D_h taking a value of 1 if we are at hour h and 0 otherwise. The impact of macro announcement m on commodity futures volatility is assessed by looking at the significance of the Φ_m coefficient in the variance equation (10). To see the impact of the financialization variable $X_{i,t}$ on commodity futures volatility, we look at the β coefficient. Finally, we look at the ϕ_k coefficient to assess the simultaneous impact on commodity futures volatility of financialization and the surprise in macro announcement m .

Among the announcements in our sample, all but one are “good news.” Only a positive surprise in Initial Jobless Claims indicates a deterioration in economic conditions. Therefore, the surprise coefficient is expected to be positive for all pro-cyclical commodities (i.e., all but gold and silver) for all announcements except Initial Jobless Claims, for

which it should be negative (since a positive surprise is “bad news”). In the case of gold and silver, which are safe-haven commodities, the reverse is expected for coefficient signs.

4.3 Impact by type of non-commercial trader

To better understand the effects of financialization, we repeat the procedure in equations (9) and (10) for two separate groups of non-commercial investors: swap dealers and money managers. A swap dealer is an entity that deals primarily in swaps for a commodity and uses the futures markets to manage or hedge the risk associated with those swaps transactions. The swap dealer’s counterparties may be speculative traders, like hedge funds, or traditional commercial clients that are managing risk arising from their dealings in the physical commodity. A money manager is a registered commodity trading advisor (CTA), a registered commodity pool operator (CPO), or an unregistered fund identified by the CFTC. These traders manage and conduct organized futures trading on behalf of clients. For both categories (swap dealers and managed money), the CFTC reports the number of long and short positions. We compute the NLS index (Hedegaard, 2011) for each trader category, allowing us to quantify the extent of speculation by money managers and swap traders, respectively. For swap traders, we denote the index by NLS_{swap} while for money managers, it is denoted by NLS_{mm} .

4.3.1 Money Managers

Money managers in commodity markets typically refer to non-commercial market participants who are involved in managing funds and investing in commodity futures and options markets. Zhang (2022)¹⁷ They often interact with swap dealers and other commercial actors to provide liquidity in these markets Zhang (2022). Their activities are influenced by various factors such as speculative activity, imperfect information about real

¹⁷The CFTC writes that they are “registered commodity trading advisor (CTA); a registered commodity pool operator (CPO); or an unregistered fund identified by CFTC.”.

economic activity as well as supply, demand, and inventory accumulation in commodity markets ([Singleton, 2014a](#)).

4.3.2 Swap Dealers

Swap dealers in commodity markets are dealers and market makers in the swap market. They typically use futures contracts to hedge risk generated by their swap positions. In doing so, they contribute to price discovery and liquidity ([Brunetti et al., 2016](#)). The role of swap dealers has been studied in relation to index investments, as their positions are distinct from those of other market participants ([Sanders and Irwin, 2016](#)).

4.4 Principal Component Analysis for Financialization Variable

To construct a comprehensive financialization variable, we employed Principal Component Analysis (PCA). Our approach involved the following steps:

1. **Data Standardization:** Given the distinct scales and variances of our variables - Net Long Short (NLS), Market Share of Non-Commercial (MSCT), and Working-T (WT), we first standardized each variable to have a mean of zero and a standard deviation of one. This ensures equal contribution to the PCA model.

$$X_{std} = \frac{X - \mu}{\sigma} \quad (11)$$

where X is the original variable, μ is the mean, and σ is the standard deviation.

2. **Covariance Matrix Computation:** We then calculated the covariance matrix to understand how our variables vary from the mean with respect to each other. The covariance matrix forms the basis for extracting principal components.
3. **Eigenvalue Decomposition:** We performed an eigenvalue decomposition on the covariance matrix. This step involves calculating eigenvalues and eigenvectors, which

are critical in determining the principal components.

4. **Principal Components Selection:** Principal components are the eigenvectors of the covariance matrix, and they are ordered by their corresponding eigenvalues in descending order. We selected the first principal component as it explains the most variance in our data.

$$PC1 = \operatorname{argmax}(\lambda) \quad (12)$$

where $PC1$ is the first principal component and λ are the eigenvalues.

5. **Creating the Financialization Variable:** The first principal component ($PC1$), which encapsulates the most significant patterns and trends across NLS, MSCT, and WT, was used as the comprehensive financialization variable in our model.

5 Results

This section presents and discusses our baseline empirical results, as well as some robustness checks. Before describing the results, we review what is expected from macroeconomic announcements and their economic implications. [Boehm and Kroner \(2020\)](#) track the behavior of different financial assets following releases for different U.S. announcements. Their results help us tell for which macro announcements a positive sign on the surprise variable would signal a weak economy. In our sample, only Consumer Price Index ([Bryan and Cecchetti, 1993](#); [Clark et al., 1997](#)) and Initial Jobless Claims ([Fleming and Remolona, 1997, 1999](#); [Getz and Ulmer, 1990](#)) announcement releases would signal a weaker economy when the surprise is positive. For the other announcements, a positive surprise will be interpreted by investors as signaling a strong economy.

5.1 Effect of surprises and financialization on returns

Table 73 presents the results of regressions to explain high-frequency commodity futures returns in a window following a macro announcement. For brevity, this table presents only results obtained using the NLS financialization variable. Results using either MSCT or Working's T are presented in the online appendix. Our main findings are robust to the choice of proxy.

To see how macro announcement surprises affect returns, we consider the γ_m coefficient. We find that for Initial Jobless Claims, where a positive surprise is “bad news”, the coefficient is negative for crude oil and positive for gold, as expected. For surprises related to CB Consumer Confidence, Advance Retail Sales, ADP Employment, and Pending Home Sales announcements, however, the coefficients are positive for crude oil and negative for gold. These findings support the idea that crude oil is pro-cyclical while gold is considered a safe haven (see e.g., [Lucey and Li, 2015](#)).

As for the other commodities, we find that the effects on copper returns are similar to those of crude oil returns, which is as expected given its role in industrial production. The coefficients have the predicted signs, although they are not significant for all announcements. The results for silver are similar to those for gold. The surprise coefficient γ_m in particular is positive and significant for Initial Jobless Claims. For the other announcements, γ_m is negative when it is significant. Lastly, for natural gas and palladium the coefficients suggest a pro-cyclical response but they are significant for fewer announcements.

Next, we look at the θ coefficient, which quantifies the interaction effect between the macro surprise variables and the financialization proxy. For crude oil, gold and silver, θ_m has the opposite sign to the sign of the macro surprise coefficient γ_m .

Thus, an increase in financialization *reduces* the magnitude of the price adjustment due to a macro surprise. Using MSCT, financialization is significant for all commodities when we combine it with surprises for ADP Employment, Durable Goods Orders, and

Non-farm Employment announcements. If we use instead the NLS proxy, the effect is significant for surprises in Initial Jobless Claims, ADP Employment, Advance Retail Sales, New Home Sales, and Personal Income. Lastly, using Working's T as a proxy, there is a significant effect for Initial Jobless Claims, ADP Employment, CB Consumer Confidence, Durable Goods Orders, New Home Sales, and Non-farm Employment.

Thus, we find significant results, especially for employment- and household income-related macro releases. This finding is consistent with [Hördahl, Remolona, and Valente \(2020\)](#), who report that the most important macro announcements are those included in the Employment Report, as they are the most likely to affect asset returns and volatility.

5.2 Effect of surprises and financialization on volatility

Table 9 shows the results of equation (10) estimated across commodities. The macro surprise coefficient Θ_m is significant for several announcements in the case of crude oil, gold, copper and silver. It is nearly always positive when significant, consistent with the claim that macro surprises usually increase futures volatility. However, the financialization interaction coefficient ϕ_k is always negative when it is significant (e.g., for crude oil and copper), suggesting that an increase in financialization dampens the volatility reaction to macro surprises. This result is consistent with [Brunetti et al. \(2016\)](#), who argue that speculation tends to lower volatility rather than increase it. Moreover, our results are robust to using a non-parametric variance estimator instead of a GARCH model.

We repeat the volatility regressions using instead a financialization variable constructed by Principal Component analysis applied to the three proxies presented earlier. The regression results are shown in table ???. As in the case of return analysis, the coefficients obtained are similar in terms of magnitude and significance.

The results in Tables 9, 15, and 21 highlight how the sensitivity of commodity volatility to economic announcements changes according to macroeconomic conditions. The full sample, running from 2007-2023, serves as a baseline for understanding how commo-

ties generally respond to economic indicators. Crude oil, for instance, shows moderate sensitivity to economic news in this dataset.

When comparing the full sample to the Covid-19 sub-period, we find that crude oil has a greater sensitivity to specific announcements, such as Non-farm employment. During the Zero Lower Bound (ZLB) era (2007-2015), however, crude oil shows a more muted response to news, supporting a link between monetary conditions and commodity volatility.

Gold consistently reacts to economic announcements across all periods, particularly to Consumer Price Index and Personal Income. Copper does not show reactions as consistently as Gold, but it reacts in particular to Consumer Price Index and Trade Balance during the ZLB period.

The effect of financialization, measured by ϕ_m , is most significant for Gold and Palladium during the Covid period. Interestingly, ϕ_m coefficients for Copper and Natural Gas are particularly significant during the ZLB period, indicating a greater sensitivity to macroeconomic news during that sub-period.

Based on the R^2 , there is a better model fit during the ZLB period, particularly for Crude Oil and Natural Gas, than during the Covid period. This could indicate a link between monetary policy and the degree to which commodity futures react to macro news.

For all three proxies, the combined effect of macro surprises and financialization leads to economically plausible signs. The results are significant for Advance Retail Sales, Construction Spending, Factory Orders and Non-farm announcements. The only macro announcement surprise with a negative and significant coefficient across commodities is Non-farm Employment, as in [Hördahl et al. \(2020\)](#). These results suggest that commodity financialization increases the efficiency of information discovery that occurs after a surprise in the Employment Report. As for energy inventory announcements, only copper volatility reacts to crude oil news and none reacts to natural gas news.

In summary, the results provide a comprehensive understanding of how commodities respond differently to economic announcements across varied economic conditions.

5.3 Differences across market participants

This section presents additional results for the two individually reported categories of financial participants, namely swap dealers and fund managers. For this analysis, we use the NLS financialization variable, as this proxy allows for separate categories of financial traders. The MSCT and Working's T variables cannot be computed in such a way as to separate the different types of financial investors, given the presence of the number of positions of commercial traders in the variable's calculation.

The regressions results described below include a recession indicator variable defined using the NBER's Business Cycle Dating Committee. This variable is not significant in the return regressions, but it is positive and significant in the volatility regressions. This finding is robust to using the Aruoba-Diebold-Scotti (ADS) Business Conditions Index, published by the Federal Reserve Bank of Philadelphia ([Aruoba, Diebold, and Scotti, 2009](#)). The ADS variable has the advantage of being continuous rather than dichotomous, and it is updated more frequently. It is not significant in the estimated returns equation, but it is negative and significant in volatility regressions (as a higher value of ADS indicates a better economic state).

Table 10 shows results for the return regression using a financialization proxy defined only for money managers. The same results are also presented for the COVID and Zero lower bound sub-periods in tables 16 and 22 respectively. We find that increased participation by money managers has the same effect as our baseline financialization results. If we take for instance crude oil, the γ_m macro surprise coefficient is positive while the θ_m financialization coefficient is negative (for significant announcements). Since γ_m has the opposite sign of θ_m , we conclude that money managers lower hedging pressure. For swap dealers, table 11 shows that the signs for γ_m and θ_m are the same. We obtain the

same results using the COVID and zero lower bound subperiods, as shown in tables 17 and 23. Thus, it appears that swap dealers, unlike money managers, make hedging pressure worse and may not help to improve liquidity in commodity futures markets.

Tables 12 and 13 show results for the conditional variance equation using only money managers and swap dealers, respectively, to capture financialization. Tables 18 and 19 show the same results but for the COVID sub-period, while table 24 and 25 show those for the zero lower bound sub-period. For money managers, we find that the financialization interaction coefficient ϕ_k is negative when significant, while for swap dealers it is positive when significant. These results support the economic interpretation of the earlier results for returns. While increased trading by money managers dampens the effect of macro surprises on volatility, a greater presence of swap dealers seems to amplify the effect of surprises on volatility. Thus, hedging pressure is lessened with money managers but worsens with swap dealers.

While our discussion of the results focuses on crude oil as a benchmark commodity, the evidence for the other pro-cyclical commodities supports our economic arguments. Note that the coefficient signs for gold differ, however, and are instead consistent with a safe haven interpretation (Erb and Harvey, 2013; Bredin, Conlon, and Potì, 2015). While gold has characteristics of a commodity and a currency, prior research has focused on how the value of gold increases with investor risk aversion. Indeed, gold can act as a safe haven in periods of economic uncertainty and market turmoil.¹⁸ Therefore, we would expect that in times of crisis financial traders would increase their net long positions in gold futures for reasons unrelated to the actual economics of the gold market. Given the large proportion of gold futures positions held at all times by financial traders, and since non-financial traders can go long or short depending on their hedging needs, there are two possible outcomes. First, when non-financial traders are mostly long in gold futures,

¹⁸Baur and Lucey (2010) explain what empirical findings would lead to the conclusion that an asset or asset class has safe haven characteristics. For instance, asset returns should be uncorrelated or negatively correlated with other asset returns, and this property should hold only in times of market stress or turmoil.

the impact of financial traders is to worsen hedging pressure and thus increase volatility. Second, when non-financial traders are mostly short in gold futures, they are more likely to be taking opposite positions to financial traders, which should result in less hedging pressure and lower volatility.

5.4 Robustness checks

We present in this section the results of several robustness checks. First, we assess whether our results are maintained in different macroeconomic environments. The results of eq. 9 estimated using the Covid sub-sample period are reported in table 14 and for the Zero Lower Bound period (2007 to 2015) in table 20.

A second robustness check involves estimating the regressions over the full sample (2007 to 2023) using a financialization proxy constructed by Principal Component Analysis applied to the NLS, MSCT and Working's T variables. Specifically, the first PCA component is used as a financialization proxy. Results of the PCA are presented in table 7 while results of the return regressions using the PCA variable are reported in table ?? . The results using the PCA proxy are similar to our baseline results (using NLS), underscoring their robustness.

The empirical analysis of futures returns over different sample periods—the Zero Lower Bound (ZLB) period from 2007 to 2015 (Table 20), and the Covid-19 period from 2020 to 2022 (Table 14)—reveals the following insights.

Taking crude oil as a baseline, the immediate return response to a surprise in Initial Jobless Claims, as measured by the γ_m coefficient, is negative across all periods. This result shows it is not linked to particular market conditions. For some announcements such as GDP, however, the γ_m coefficient increases during the Covid period.

Gold reacts negatively to ADP Employment surprises in the two sub-sample periods as well as the full sample. The coefficient is more significant during the Covid period, suggesting its safe haven characteristic was more salient during the pandemic. In the case

of Silver, the response to a surprise in ADP Employment is negative in the full sample and during the ZLB period, but positive during the Covid period.

Overall across commodities, the magnitude of coefficients increases during the Covid sub-period, suggesting a heightened sensitivity to macro surprises. This was a period of considerable uncertainty, but also bottlenecks and supply chain problems in commodity markets. That being said, the main finding is that the results are robust in sub-periods.

We also provide robustness results for the conditional variance model (eq. 10). Results for the Covid and ZLB sub-periods are reported in table 15 and 21, respectively. Moreover, we re-estimate the model using the PCA financialization proxy. The results are similar to our baseline findings in terms of coefficient magnitude and significance. The results for Crude Oil show that it is more sensitive to macro surprises during the Covid period, and somewhat less sensitive during the ZLB period. Gold reacts to macro news, especially the CPI and Personal Income, in the two sub-periods as well as in the full sample. Copper reacts comparatively less than gold in the full sample, but is more sensitive to news such as the CPI and Trade Balance during the ZLB sub-period. The impact of financialization, measured by ϕ_m , is particularly significant for Gold and Palladium during the Covid period, while for Copper and Natural Gas the ϕ_m coefficient is more significant during the ZLB period. The R^2 suggest a better model fit during the ZLB period, especially for Crude Oil and Natural Gas, but overall there are no meaningful differences between the sub-periods and the full sample.

5.5 Discussion and implications

Our results provide a deeper understanding of price discovery in commodity markets and the role of different types of participants. Previous research, such as [Goldstein and Yang \(2022\)](#), has shown that financial investors may have an adverse impact on commodity markets by introducing noise along with new information. However, our findings offer a different perspective by empirically assessing which types of financial participants

seem to be responsible for introducing more noise to these markets.

Unlike [Goldstein and Yang \(2022\)](#), we find that noise is not due to a concentration of financial participants, but rather to the rise of swap dealers in commodity markets. We find that the increased participation of financial investors, particularly money managers, improves price accuracy and reduces volatility. An increased participation by swap dealers, however, leads to less accurate prices and to greater volatility. Thus, if traders only consisted of money managers, an increase in their proportion beyond a certain threshold would continue to improve price accuracy and reduce volatility. However, if traders were composed only of swap dealers, prices would be less accurate and more volatile, regardless of whether the threshold was exceeded or not. In addition, we find that volatility reacts less to announcement surprises when a commodity is more financialized, suggesting a benefit for traditional market participants. Our results are consistent with research including [Brunetti and Buyuksahin \(2009\)](#) and [Cheng, Kirilenko, and Xiong \(2015\)](#), who have shown that fund managers, being more sensitive to market information, contribute to price discovery and liquidity in commodity markets.

6 Conclusion

This paper investigates the impact of financialization on the real economy through a new angle, namely high-frequency effects linked to macroeconomic announcements. We test empirically whether financialization has amplified the impact of macro announcement surprises on prices and volatility in commodity markets. Indeed, it is well known that equity and bond markets react to these surprises. If commodities behave more like financial assets due to financialization, we should expect commodity futures to display greater reactions to macro surprises. Rather than split our sample in two (pre- and post-financialization), we measure this variable by means of a time-varying and commodity-specific proxy. Our results suggest that financialization, by reducing volatility and im-

proving price discovery, is beneficial to commodity markets. Indeed, a greater participation by financial actors does not appear to amplify the effects of macro announcement surprises on prices or volatility. On the contrary, greater financialization in a given commodity has a dampening effect such that prices and volatility react less to macro surprises. This finding is consistent with information diffusion economic arguments.

Our results also find support in a literature suggesting that non-traditional investors, such as hedge funds, are beneficial to commodity markets by supplying liquidity, reducing volatility, and improving market efficiency. The results we present are robust to the use of a non-parametric variance estimator, different proxies for financialization, and to alternative empirical specifications (e.g., regression equation, high-frequency window, etc.). Lastly, by documenting a dampening effect on volatility shocks (thus reducing the real option value of delaying investments), this paper's findings suggest that financialization may also help with sustainability efforts in financing a green energy transition, alongside other instruments such as green bonds and portfolio screens for sustainable investments.

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7 Tables

Table 1: Summary of the literature: Effect of financialization and speculation on volatility

References	Proxy used for financialization or speculation	Impact on volatility
Chang et al. (1997)	CFTC's definition of speculators	Positive
Daigler and Wiley (1999)	CFTC's definition of speculators	
Irwin and Holt (2004)	Set speculators	
Tang and Xiong (2012)	Commodity index trader (CIT) positions	
Irwin and Brorsen (1987)	Amount of money invested in traded futures funds	Neutral
Irwin and Yoshimaru (1999)	Trading volume of large-commodity pool operators	
Bryant et al. (2006)	CFTC's definition of speculators	
Haigh et al. (2007)	Number and positions of commodity pool operators and hedge funds	
Brunetti et al. (2016)	The net positions of hedge funds and floor brokers	Negative
Aulerich et al. (2012)	Commodity index trader (CIT) positions	

Table 2: Details of the macroeconomic announcements used in the study

Announcement	Frequency	Source*	Unit	Time
GDP advance	Quarterly	BEA	%	8:30
GDP preliminary	Quarterly	BEA	%	8:30
GDP final	Quarterly	BEA	%	8:30
Personal income	Monthly	BEA	%	8:30
ADP employment	Monthly	ADP	Number of jobs	8:15
Initial jobless claims	Weekly	ETA	Number of claims	8:30
Non-farm employment	Monthly	BLS	Number of jobs	8:30
Factory orders	Monthly	BC	%	10:00
Industrial production	Monthly	FRB	%	9:15
Construction spending	Monthly	BC	%	10:00
Durable goods orders	Monthly	BC	%	8:30
Advance retail sales	Monthly	BC	%	8:30
Consumer credit	Monthly	FRB	USD	15:00
Personal consumption	Monthly	BEA	%	8:30
Building permits	Monthly	BC	Number of permits	8:30
Existing home sales	Monthly	NAR	Number of homes	10:00
Housing starts	Monthly	BC	Number of homes	8:30
New home sales	Monthly	BC	Number of homes	10:00
Pending home sales	Monthly	NAR	%	10:00
Trade balance	Monthly	BEA	USD	8:30
Consumer price index	Monthly	BLS	%	8:30
Producer price index	Monthly	BLS	%	8:30
CB Consumer confidence index	Monthly	CB	Index	10:00
UM Consumer sentiment	Monthly	TR/UM	Index	9:55
Weekly Crude Oil Stock	Weekly	EIA	number of barrels	10:30
Weekly Natural Gas Stock	Weekly	EIA	number of cubic feet	11:00

Shows the category, frequency, source, unit of measure, and release time for each macroeconomic announcements. *(Automatic Data Processing, Inc. (ADP), Bureau of the Census (BC), Bureau of Economic Analysis (BEA), Bureau of Labor Statistics (BLS), Conference Board (CB), Employment and Training Administration (ETA), Federal Reserve Board (FRB), Institute for Supply Management (ISM), National Association of Realtors (NAR), Thomson Reuters/University of Michigan (TR/UM), and U.S. Department of the Treasury (USDt).)

Table 3: Descriptive statistics: Standardized surprises for each of the macroeconomic announcements

Announcements	Nb. obs.	Min.	1st Qu.	Med.	Mean	3rd Qu.	Max.
Initial jobless claims	825	-3.407	-0.0720	-0.007	0.068	0.065	22.672
ADP Employment	202	-2.751	-0.0640	0.008	0.046	0.078	12.880
CB Consumer	201	-2.635	-0.4638	0.093	0.102	0.872	2.412
Advance retail sales	202	-4.028	-0.3661	-0.092	0.023	0.183	8.879
Building permit	198	-2.375	-0.5356	0.025	0.082	0.627	3.205
Construction spending	202	-3.054	-0.5912	-0.099	-0.130	0.493	4.335
Consumer_credit	202	-2.055	-0.5217	0.104	0.061	0.619	3.131
Consumer price index	201	-3.483	-0.6966	0.000	-0.035	0.697	4.180
Durable goods orders	193	-2.702	-0.5757	0.022	0.037	0.531	6.688
Existing home sales	202	-4.729	-0.4627	0.000	-0.067	0.488	2.467
Factory orders	202	-3.040	-0.3378	0.000	0.081	0.507	2.534
GDP	185	-2.589	-0.3698	0.000	-0.026	0.370	2.958
Housing starts	199	-2.285	-0.6178	0.000	0.042	0.624	3.401
Industrial production	385	-4.773	-0.5727	0.000	-0.080	0.573	2.291
Michigan Sentiment Index	202	-3.922	-0.4100	0.036	-0.049	0.463	3.244
New home sales	202	-3.062	-0.3466	0.116	0.118	0.631	3.562
Non-farm employment	201	-0.892	-0.0564	0.005	0.078	0.071	13.169
Pending home sales	202	-2.949	-0.4244	0.022	0.075	0.581	5.674
Personal consumption	201	-3.666	-0.3666	0.000	-0.026	0.367	2.566
Personal income	201	-1.079	-0.0771	0.000	0.095	0.077	13.108
Producer price index	188	-3.168	-0.5760	0.000	0.083	0.864	2.880
Trade balance	202	-1.831	-0.1801	-0.018	0.013	0.207	2.359

This table presents descriptive statistics for the standardized surprise $(A_{kt} - E_{kt})/\sigma_{kt}$ for each of the macroeconomic announcements. The column (Nb. Observations) shows the number of individual surprises that can be calculated over the whole analysis period. The columns (Min.), (1st Qu.), (Median), (Mean), (3rd Qu.) and (Max) present respectively the minimum value, the first quartile, the median, the mean, the third quartile and the maximum value for the standardized surprise of each macroeconomic announcement

Table 4: Details of the commodity futures contracts in the study

Commodity name	Commodity Ticker	Commodity Exchange	Price quotation	Contract unit
Crude Oil	CL	New York Mercantile Exchange	U.S. dollars and cents per barrel	1,000 barrels
Gold	GC	Commodity Exchange Inc.	U.S. dollars and cents per troy ounce	100 troy ounces
Copper	HG	Commodity Exchange Inc.	U.S. dollars and cents per pound	25,000 pounds
Natural Gas	NG	New York Mercantile Exchange	U.S. dollars and cents per MMBtu	10,000 MMBtu
Palladium	PA	New York Mercantile Exchange	U.S. dollars and cents per troy ounce	100 troy ounces
Silver	SI	Commodity Exchange Inc.	U.S. dollars and cents per troy ounce	5,000 troy ounces

This table presents information about the futures contracts of the 6 selected commodities: Crude Oil, Gold, (High-Grade) Copper, Natural Gas, Palladium and Silver. For each commodity, the commodity ticker, commodity exchange, price quotation and contract unit are presented.

Table 5: Descriptive statistics: 5-minute intraday futures price returns

Commodity Futures	Min (%)	1st Qu. (%)	Med. (%)	Mean (%)	3rd Qu. (%)	Max (%)
Crude Oil (CL=F)	-33.908	-0.0441	0.000	0.000	0.0447	41.641
Gold (GC=F)	-2.782	-0.0241	0.000	0.0001	0.0244	3.064
Copper (HG=F)	-4.534	-0.0363	0.000	-0.0001	0.0365	8.877
Natural Gas (NG=F)	-6.735	-0.0528	0.000	-0.0003	0.0532	15.620
Palladium (PA=F)	-13.350	-0.034	0.000	0.0001	0.0348	9.467
Silver (SI=F)	-7.504	-0.0394	0.000	0.0001	0.0415	4.242

Shows descriptive statistics of the 5-minute intraday returns, for each commodity futures. The columns (Min.), (1st Qu.), (Median), (Mean), (3rd Qu.) and (Max) present respectively the minimum value, the first quartile, the median, the mean, the third quartile and the maximum value for the 5 minute intraday returns.

Table 6: Descriptive statistics: MSCT, NLS and Working's T financialization variables

	CL	GC	HG	SI	PA	NG
MSCT						
Min.	0.0629	0.166	0.1223	0.1552	0.05845	0.03741
1st Qu.	0.1472	0.2702	0.2344	0.2078	0.3627	0.1292
Median	0.1652	0.3052	0.2826	0.2527	0.4062	0.2344
Mean	0.1642	0.3045	0.2915	0.2606	0.3916	0.217
3rd Qu.	0.1855	0.3412	0.353	0.3079	0.4386	0.2724
Max.	0.2431	0.4504	0.4968	0.4593	0.5955	0.4023
NLS						
Min.	-0.1129	-0.082	-0.3238	-0.1364	-0.3508	-0.2745
1st Qu.	0.0358	0.2285	-0.1067	0.1547	0.3181	-0.1731
Median	0.1084	0.3302	0.0171	0.2452	0.4532	-0.08146
Mean	0.1107	0.3098	0.02039	0.2425	0.4213	-0.09439
3rd Qu.	0.1834	0.4012	0.1417	0.3334	0.5652	-0.03211
Max.	0.2941	0.5269	0.4413	0.57478	0.7343	0.07936
Working's T						
Min.	1.0219	1.0437	1.0244	1.0143	1.00	1.0044
1st Qu.	1.0766	1.0907	1.1522	1.0762	1.1065	1.132
Median	1.10056	1.1401	1.2345	1.1178	1.1557	1.2097
Mean	1.1032	1.161	1.2541	1.1509	1.1931	1.2375
3rd Qu.	1.1244	1.1974	1.3569	1.1881	1.2348	1.3415
Max.	1.2479	1.6638	1.6554	1.6048	1.9384	1.5589

This table descriptive statistics of the financialization variables, for each commodity futures contract. The line (Min.), (1st Qu.), (Median), (Mean), (3rd Qu.) and (Max) present respectively the minimum value, the first quartile, the median, the mean, the third quartile and the maximum value for the 5-minute intraday returns. CL: crude oil, GC: gold, HG: high-grade copper, SI: silver, PA: palladium, NG: natural gas.

Table 7: Principal Component Analysis using MSCT, NLS and Working's *T* financialization variables

Principal Component 1						
	GC	CL	HG	SI	NG	PA
Standard deviation	23.280%	9.707%	16.340%	16.910%	15.720%	28.050%
Proportion of Variance	86.580%	84.051%	63.980%	80.210%	81.970%	80.860%
Cumulative Proportion	86.580%	84.051%	63.980%	80.210%	81.970%	80.860%
Principal Component 2						
	GC	CL	HG	SI	NG	PA
Standard deviation	9.167%	4.228%	12.260%	8.399%	7.373%	13.650%
Proportion of Variance	13.420%	15.949%	36.020%	19.789%	18.028%	19.140%
Cumulative Proportion	100.000%	100.000%	100.000%	100.000%	100.000%	100.000%

Table 8: Announcement (macro & commodity-specific) and financialization (NLS) effects on futures returns (Kurov) - Full Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m
Macroeconomic News Announcements												
Initial jobless claims	-0.19763***	0.87888***	0.70022***	-1.33955***	0.4493***	-1.98801***	-0.0074	-0.0154	-0.02913**	0.22057***	-0.00266	-0.10938
ADP Employment	0.34291***	-1.06756**	-1.18741***	2.52498***	0.58107***	-2.36989***	0.02591***	0.169	0.00801	-0.1417	-0.11464***	-2.79764***
CB Consumer	0.11672***	-0.46895***	-0.05938***	0.0703*	0.07957***	-0.15159**	0.00049	0.00567	-0.06841***	0.11631**	0.02933	-0.0144
Advance retail sales	0.19991***	-0.74542***	-0.22861***	0.44747***	0.10409***	-0.42536**	0.01333	-0.08638	-0.01767	0.00664	-0.02725	-0.47149
Building permit	-0.00037	0.03995	-0.02651**	0.03697	0.0627***	-0.15653**	0.00698	-0.00358	-0.00233	-0.03748	0.04272*	0.36164**
Construction spending	0.0219	-0.14609	-0.04079**	0.09211**	0.04044*	-0.14376*	-7e-04	-0.18868***	0.00951	-0.00257	-0.02886	-0.17899
Consumer credit	-0.01646	0.08344	-0.01359*	0.02955	-0.01554*	0.06217	0.00217	0.02437	0.01087	-0.01043	-0.01175	-0.11173
Consumer price index	0.08391***	-0.29308**	-0.17224***	0.31022***	0.26865***	-0.75945***	-0.03002***	-0.02265	-0.14223***	0.23064***	0.01302	0.15012
Durable goods orders	0.153***	-0.73816***	-0.07265***	0.14703***	0.06435***	-0.1493*	0.01052*	0.00024	-0.05354***	0.14525***	-0.00328	-0.09972
Existing home sales	0.08722***	-0.59238***	-0.02	0.05026	-0.02244	0.10822	0.02238***	-0.06905	0.01177	-0.04488	0.04083	0.21897
Factory orders	-0.00112	0.01036	-0.02949	0.00285	-0.05976**	0.14591	0.00357	0.02488	-0.01887	0.00026	0.10729***	0.68503***
GDP	0.04571*	-0.1839	-0.16085***	0.24165***	0.16953***	-0.33056***	0.0092	-0.00478	-0.05405***	0.00789	-0.03601	-0.3373*
Housing starts	0.03224	-0.1269	-0.06263***	0.11383***	0.07118***	-0.14876**	0.00503	0.00563	0.00159	-0.03648*	0.0234	0.38343**
Industrial production	0.02075	-0.15376	-0.00085	-0.07097	-0.01332	-0.11571	-0.00947	-0.00797	-0.02227	0.02109	-0.02279	-0.02294
New home sales	0.09853***	-0.43638**	-0.0694***	0.13595***	-0.03309*	-0.04095	-0.02368***	0.08652*	-0.00796	0.02235	-0.00278	-0.08427
Non-farm employment	1.40422***	-5.11125***	-3.19414***	6.81185***	1.38897***	-6.04367***	0.02702***	0.62417**	0.00013	0.1534	-0.2181***	-6.29434***
Pending home sales	0.07333***	-0.34943**	-0.0184	0.0031	-0.01292	-0.02301	0.01712**	-0.11126	-0.00877	0.03099	-0.02417	-0.39913
Personal consumption	-0.01478	0.06799	-0.03594**	0.06306*	0.00926	-0.05828	0.00274	0.0869	0.013	-0.05027	0.0037	0.36897
Personal income	0.00873	-0.13628	-0.0719	0.15	0.25364***	-1.0522**	-0.01709*	-0.27874**	-0.01271	-0.0224	-0.02828	-0.82024
Producer price index	0.03513*	-0.23561**	-0.07698***	0.15026***	-0.01476	-0.04153	-0.0048	-0.01293	-0.02035	0.04451	-0.04862*	-0.22346
Trade balance	0.0032	-0.05635	-0.05207**	0.11911**	-0.01111	0.04144	-0.00354	-0.13232	-0.03871	0.07731	-0.04667	-0.45064
Announcements specific to commodity markets												
Crude Oil Weekly inventory	-0.07659***	-0.39633***									-0.36472***	-0.07672
Natural Gas Weekly inventory												
Observations	1193455		1190001		1180816		1138696		749168		1101836	
R ²	0.001975		0.002043		0.001014		0.00029		0.000246		0.001176	

This table presents estimates of eq. 6, $R_t^{t+\tau} = \alpha + \sum_{m=1}^{22} \gamma_m S_{m,t} + \delta X_{t,t} + \sum_{m=1}^{22} \theta_m (S_{m,t} \cdot X_t) + \beta R_{t-\tau}^t + \epsilon_t$ using the method proposed by Kurov et al. (2019) and financialization variable $X_{t,2} = NLS_t$. The γ_m coefficients capture the instantaneous change in return when an announcement has just occurred and especially if that announcement was unanticipated. The coefficients θ_m capture the instantaneous change in return when an announcement has just occurred in conjunction with the level of financialization.

Table 9: Announcement (macro & commodity-specific) and financialization (NLS) effects on futures conditional variance - Full Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m
Macroeconomic News Announcements												
Initial jobless claims	0.10116***	-0.43618***	0.04743***	0.01989	0.11651***	-0.18946***	0.02474***	-0.05555***	0.11786***	-0.11355***	-0.01167	-0.02107
ADP Employment	0.02792	-0.20043	0.06377***	-0.08427***	0.05327***	-0.03006	0.02831***	0.03382	-0.02858*	0.01538	0.016	0.05689
CB Consumer	0.10356***	-0.4144***	0.03139***	0.01209	0.0454***	0.02788	0.02838***	-0.11029**	0.06091***	-0.09895***	-0.0077	-0.01276
Advance retail sales	0.16868***	-0.86165***	0.09604***	-0.05612*	0.12379***	-0.05358	0.02819***	-0.15572***	0.11351***	-0.16926***	0.05769***	0.25105*
Building permit	0.1047***	-0.54035***	0.04592***	-0.06034*	0.06133***	-0.19301***	0.00484	-0.07408*	0.07672***	-0.06975***	0.0219	-0.02627
Construction spending	0.15338***	-0.62724***	0.09518***	-0.11889***	0.08606***	-0.09793	0.04108***	-0.18959***	0.04626***	0.0133	-0.01904	-0.32089**
Consumer credit	0.04798*	-0.26103*	0.00778	-0.00318	0.01661	0.00378	0.0028	0.03858	-0.00633	0.03412	0.00152	0.01392
Consumer price index	0.07237**	-0.0668	0.13915***	-0.07513*	0.26627***	-0.52898***	0.09389***	-0.37452***	0.18224***	-0.27404***	0.02706	0.03922
Durable goods orders	0.09826***	-0.41079***	0.0231**	0.01561	0.04156***	0.02205	0.00773	-0.02411	0.06781***	-0.0373	-0.02225	-0.25576*
Existing home sales	0.04757*	-0.05948	0.01879*	0.04102	0.03838***	-0.02961	0.02231***	-0.13249***	0.04815***	-0.06749**	0.02201	-0.11251
Factory orders	0.08762***	-0.31063**	-0.00678	0.16162***	0.01842	0.15052**	0.02641***	-0.13159***	0.03966***	-0.0403	-0.03041	-0.69494***
GDP	0.11632	-0.61837***	0.04659**	0.05303	0.09959***	-0.06323	0.02464***	0.01653	0.11025***	-0.12093***	-0.05116**	-0.30947**
Housing starts	0.11313***	-0.60745***	0.0366***	-0.03112	0.06213***	-0.19012***	0.00848	-0.09479**	0.05963***	-0.04924	0.01829	0.04047
Industrial production	0.09578***	-0.63833***	0.01928*	0.00308	0.02059	-0.00706	0.00182	-0.04794	0.01964	-0.07145**	-0.03281	-0.18705
New home sales	0.10149***	-0.52688***	0.04068***	0.01515	0.05778***	0.028	0.02485***	-0.00096	0.06768***	-0.11522***	-0.02516	-0.22929*
Non-farm employment	0.36475***	-1.20583***	0.23592***	0.04682	0.38126***	-0.14107**	0.12881***	-0.15602***	0.17336***	-0.05048	0.02807	-0.35383**
Pending home sales	0.1092***	-0.49393***	0.01999*	-0.01624	0.02548*	0.02096	0.02833***	-0.00831	0.0587***	-0.08511***	-0.01374	-0.30813**
Personal consumption	0.00638	0.02122	0.06203***	-0.08145**	0.10177***	-0.26781***	0.00662	-0.00781	0.11081***	-0.14798***	0.0241	-0.37604**
Personal income	0.0065	0.04657	0.09149***	-0.15016***	0.1245***	-0.34101***	0.01322**	-0.02338	0.09417***	-0.10866***	0.00283	-0.43167***
Producer price index	0.09735***	-0.34959**	0.0172	0.08462**	0.09045***	-0.09926	0.01106*	-0.05096	0.11987***	-0.06696**	0.0081	0.00477
Trade balance	0.07844***	-0.12829	-0.0065	0.20643***	0.00273	0.39295***	0.00919	0.02977	0.10323***	-0.08686***	0.01821	0.11158
Announcements specific to commodity markets												
Crude Oil Weekly inventory	0.00456	0.62373***										
Natural Gas Weekly inventory												
Observations	1193455	1190001	1180816	1138696	749168	1101836						
R ²	0.070652	0.080638	0.073961	0.070571	0.076293	0.135964						

This table presents estimates of eq. 10 using financialization variable NLS_t . The equation is $\sigma_t^2 = \alpha_0 + \alpha_1 \sigma_{t-1}^2 + \alpha_2 \varepsilon_t^2 + \sum_{m=1}^{22} \Phi_m D_{m,t} + \beta X_{i,t} + \sum_{k=1}^n \phi_k I_{kt} + \sum_{h=1}^{23} \rho_h D_{h,t}$ where $I_{kt} = D_{m,t} \cdot X_{i,t}$ and $D_{m,t}$ is a macro announcement dummy variable for release m . The Φ_m coefficients capture the instantaneous change in the conditional variance when an announcement has just occurred. The ϕ_m coefficients capture the conditional variance when an announcement has just occurred in conjunction with the level of financialization.

Table 10: Announcement (macro & commodity-specific) and financialization (MM-NLS) effects on futures returns (Kurov) - Full Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m
Macroeconomic News Announcements												
Initial jobless claims	-0.02956	0.01952	0.30064***	-0.96225***	-0.0263	0.33366	-0.00912	-0.02954	-0.04621**	0.27526***	0.00955	0.06074
ADP Employment	0.29189**	-1.23728*	-0.06824	0.15437	0.22281***	-0.97429**	0.02291***	0.14952	0.01012	-0.11814	-0.02204	-0.49202
CB Consumer	0.11505***	-0.65428**	-0.04763***	0.05599	0.06964***	-0.13979**	0.00036	0.00188	-0.06685***	0.11545**	0.03748**	0.12201
Advance retail sales	0.18018***	-0.95056***	0.00625	-0.22754***	0.09507***	-0.52284***	0.01327	-0.06932	-0.02139	0.02073	-0.00518	-0.24418
Building permit	-0.03075	0.30773*	-0.01409*	-0.00246	0.04883***	-0.12171**	0.00701	7e-04	-0.00304	-0.03782	0.00348	0.08695
Construction spending	0.04684	-0.41529	-0.04794**	0.17091***	0.0337**	-0.15213*	0.00487	-0.12621**	0.00961	-0.00307	-0.0112	-0.09293
Consumer credit	-0.00932	0.05736	-0.01044**	0.04101*	-0.01023	0.05293	0.00149	0.02019	0.01095	-0.01252	-0.00177	-0.04766
Consumer price index	0.08568***	-0.42002**	-0.15785***	0.47194***	0.21663***	-0.72688***	0.00148	-0.01458	-0.13577***	0.22337***	-0.00076	0.07776
Durable goods orders	0.09316***	-0.69602***	-0.05849***	0.15716***	0.05268***	-0.11874	0.01489**	-0.05119	-0.06161***	0.17723***	0.00976	-0.02018
Existing home sales	0.09536***	-0.80184***	-0.00676	0.01184	-0.01163	0.07853	0.02082**	-0.01303	0.01267	-0.05028	0.0132	0.0533
Factory orders	-0.02429	0.21872	-0.04389***	0.06866	0.05024**	-0.14478	0.00322	0.01249	-0.01854	-0.00031	0.04152**	0.38741**
GDP	0.04408*	-0.25171	-0.08308***	0.02306	0.12802***	-0.1874**	0.00637	0.02704	-0.05987***	0.02416	-0.00388	-0.28244*
Housing starts	-0.01672	0.19837	-0.02757***	0.00801	0.04577***	-0.0365	0.00348	0.0242	0.00214	-0.04053*	-0.01298	0.14226
Industrial production	-0.00324	-0.03528	-0.02254**	-0.02049	-0.02215	-0.10057	-0.00675	-0.03402	-0.03174	0.04511	-0.01321	0.23336
New home sales	0.03959	-0.2014	-0.03508***	0.05297	0.03238**	0.06133	0.0241***	-0.04529	-0.01226	0.0324	0.00382	-0.18259
Non-farm employment	0.79766***	-4.07313***	-0.5167***	2.14516***	0.77114***	-4.43004***	0.01496*	0.61309***	0.02467	-0.16206	-0.0045	-0.95575
Pending home sales	0.05641	-0.31219	-0.01885*	0.00739	-0.02053	0.01626	0.01554*	-0.03397	-0.01511	0.05025	0.01033	-0.26951
Personal consumption	0.09082**	-0.64077***	-0.01948**	0.04335	0.00547	-0.06372	-0.00024	0.081	0.01162	-0.04886	-0.02503	0.23224
Personal income	0.05847	-0.50101	0.01713	-0.09655	0.14463**	-0.83394**	-0.00826	-0.20026	-0.01654	0.00889	0.00405	-1.05049*
Producer price index	0.03892*	-0.32583*	-0.05523***	0.13297***	-0.006	-0.12185	-0.00347	-0.03082	-0.0222	0.05468	-0.02632	-0.11214
Trade balance	0.00732	-0.10801	-0.03076**	0.08094*	-0.00911	0.03998	0.00382	-0.118	-0.02494	0.06033	-1e-04	-0.26851
Announcements specific to commodity markets												
Crude Oil Weekly inventory	-0.07233***	-0.61043***									-0.35459***	-0.1223
Natural Gas Weekly inventory												
Observations	1193455		1190001		1180816		1138696		749168		1101836	
R ²	0.001814		0.001512		0.000923		0.000284		0.000235		0.001129	

This table presents estimates of eq. 6, $R_t^{t+\tau} = \alpha + \sum_{m=1}^{22} \gamma_m S_{m,t} + \delta X_{t,i} + \sum_{m=1}^{22} \theta_m (S_{m,t} \cdot X_t) + \beta R_{t-\tau}^t + \epsilon_t$ using the method proposed by Kurov et al. (2019) and financialization variable $MM_N LS_t$. The γ_m coefficients capture the instantaneous change in return when an announcement has just occurred and especially if that announcement was unanticipated. The coefficients θ_m capture the instantaneous change in return when an announcement has just occurred in conjunction with the level of financialization.

Table 11: Announcement (macro & commodity-specific) and financialization (SWAP-NLS) effects on futures returns (Kurov) - Full Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m
Macroeconomic News Announcements												
Initial jobless claims	-0.18601***	-0.76285***	0.36069***	1.02251***	0.01407	-0.51053	0.08238**	-0.44801**	0.00571	-0.0346	-0.00709	0.23566
ADP Employment	0.42554***	1.77009***	-0.73172***	-1.92332***	0.14323***	1.9079***	0.10514	-0.41655	-0.08432*	-0.379*	-0.07015***	1.98134***
CB Consumer	0.08606***	0.38665***	-0.02682***	0.06149	0.04702***	0.04493	-0.05678***	0.2524***	-0.02421**	-0.13691**	0.02902	0.01534
Advance retail sales	0.18764***	0.83656***	-0.22074***	-0.62235***	0.02334*	0.32997	-0.05224**	0.34386**	-0.02373	0.03729	-0.01204	0.18256
Building permit	0.01182	0.0335	-0.02794***	-0.06415**	0.03852***	0.19589*	0.00878	-0.00836	-0.0149**	0.06228	0.06712**	-0.57136***
Construction spending	0.00921	0.10371	-0.01531*	-0.03974	0.01559	0.15444	-0.04579**	0.19927**	0.01295	0.06733	-0.00588	-0.03512
Consumer credit	-0.00057	0.00723	-0.00297	0.00152	-0.00353	0.00472	0.00671	-0.01905	0.00686	0.02748	-0.0201	0.18485
Consumer price index	-0.05142***	-0.12282	-0.04196***	-0.11608**	0.10927***	0.5012***	-0.07969***	0.20611**	-0.05426***	0.06733	0.04152	-0.40373
Durable goods orders	0.08229***	0.40797***	-0.02824***	-0.02785	0.02337**	0.27759***	-0.00067	0.04659	0.00927	-0.09008**	0.01138	-0.01219
Existing home sales	0.02521**	0.2845***	-0.00669	-0.0205	-0.00093	0.07534	-0.06009***	0.33603***	-0.00636	0.05054	0.05433	-0.33599
Factory orders	-0.00312	-0.03814	-0.0041	0.145**	0.03244***	-0.19383	0.01462	-0.04673	-0.01972	-0.032	0.09608***	-0.62225**
GDP	0.03848**	0.17661**	-0.09123***	-0.06216	0.09968***	-0.15355	0.02494	0.14602	-0.05188***	-0.00867	-0.03176	0.30154
Housing starts	0.03038**	0.13425*	-0.05461***	-0.14857***	0.05147***	0.21799**	-0.01782	0.11965*	-0.01043	0.0227	0.01927	-0.32116
Industrial production	0.02354	0.1985*	-0.0035	0.10713**	0.03408***	0.14657	-0.02953	0.09807	-0.01335	-0.01264	-0.02947	0.09028
New home sales	0.07156***	0.34303***	-0.04011***	-0.08154*	0.03797***	0.09004	-0.03774**	0.28795***	9e-05	-0.02615	0.01621	-0.11025
Non-farm employment	1.81964***	8.77192***	-3.0793***	-8.25792***	0.22593***	3.88087***	-0.48535***	2.66148***	-0.14565*	-0.68396*	-0.06665**	2.42302**
Pending home sales	0.04227***	0.27467***	-0.01662	0.0021	-0.01694	0.07454	-0.03279	0.19949**	0.00391	-0.02496	-0.00429	0.25203
Personal consumption	-0.00158	-0.00543	-0.01737*	-0.02729	0.00538	0.32148**	-0.00779	0.03095	-0.00577	0.07145	0.00273	-0.38325
Personal income	-0.02221	0.00621	-0.05774*	-0.15405	0.08167***	1.82948***	-0.09051	0.43742	-0.02297	0.0388	-0.00815	0.53016
Producer price index	0.00818	0.07471	-0.0242***	-0.00196	0.02453***	0.08862	-0.0315	0.11098	-0.00586	-0.03594	-0.0363	0.15142
Trade balance	-0.00089	0.03751	-0.01618	-0.06246	-0.01214	-0.23857	-0.04471	0.14389	-0.0135	-0.22026*	0.00043	0.12505
Announcements specific to commodity markets												
Crude Oil Weekly inventory	-0.14367***	0.03576										
Natural Gas Weekly inventory											-0.47323***	0.90803***
Observations	1193455		1190001		1180816		1138696		749168		1101836	
R ²	0.001962		0.002064		0.000809		0.000337		0.000195		0.001226	

This table presents estimates of eq. 6, $R_t^{t+\tau} = \alpha + \sum_{m=1}^{22} \gamma_m S_{m,t} + \delta X_{t,j} + \sum_{m=1}^{22} \theta_m (S_{m,t} \cdot X_t) + \beta R_{t-\tau}^t + \epsilon_t$ using the method proposed by Kurov et al. (2019) and financialization variable $SWAP_N L S_t$. The γ_m coefficients capture the instantaneous change in return when an announcement has just occurred and especially if that announcement was unanticipated. The coefficients θ_m capture the instantaneous change in return when an announcement has just occurred in conjunction with the level of financialization.

Table 12: Announcement (macro & commodity-specific) and financialization (MM-NLS) effects on futures conditional variance - Full Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m
Macroeconomic News Announcements												
Initial jobless claims	0.08555***	-0.47011***	0.05181***	0.0105	0.10409***	-0.17922***	0.02685***	-0.04784***	0.12581***	-0.13984***	-0.01102**	-0.04846
ADP Employment	0.00118	-0.03201	0.04021***	-0.02019	0.05068***	-0.02457	0.02543***	0.0631*	-0.02832*	0.01564	0.01156	0.05686
CB Consumer	0.11197***	-0.66649***	0.0398***	-0.01979	0.04828***	0.01872	0.03063***	-0.04699	0.06245***	-0.10441***	-0.00788	-0.04287
Advance retail sales	0.14174***	-0.96296***	0.08087***	-0.01399	0.12479***	-0.08493	0.0333***	-0.11206***	0.1253***	-0.20972***	0.03867***	0.27501**
Building permit	0.10251***	-0.75666***	0.02103***	0.02773	0.04613***	-0.16591***	0.00635	-0.03797	0.08523***	-0.10006***	0.02777**	0.07714
Construction spending	0.14202***	-0.78417***	0.06648***	-0.04959*	0.07206***	-0.04082	0.04891***	-0.17441***	0.05608***	-0.01314	0.00738	-0.30331***
Consumer credit	0.03931	-0.28727	0.00369	0.01455	0.0097	0.05397	0.00119	0.03617	-0.00823	0.03933	0.00029	0.00914
Consumer price index	0.05875*	0.03855	0.15937***	-0.21038***	0.23368***	-0.51978***	0.10425***	-0.21797***	0.18249***	-0.28192***	0.02276	0.01481
Durable goods orders	0.05652**	-0.2101	0.02385***	0.02141	0.04912***	-0.02468	0.00903	-0.03221	0.07695***	-0.06578*	0.00235	-0.15833
Existing home sales	0.11456***	-0.69145***	0.02386***	0.03978	0.04052***	-0.05757	0.02726***	-0.11502***	0.05097***	-0.0766**	0.03224***	-0.0838
Factory orders	0.16239***	-1.1141***	0.03236***	-0.07028**	0.02909***	0.13809**	0.03208***	-0.13161***	0.04159***	-0.04631	0.03273***	-0.46006***
GDP	0.08125***	-0.53798**	0.05433***	0.04432	0.09089***	-0.02946	0.02457***	0.00785	0.12198***	-0.15871***	-0.02217*	-0.24014**
Housing starts	0.11207***	-0.85733***	0.02082***	0.02774	0.0488***	-0.17498***	0.01059*	-0.05686	0.06737***	-0.07388**	0.01719	0.09484
Industrial production	0.12021***	-1.14614***	0.01389**	0.03136	0.03199***	-0.09631	0.00429	-0.06702*	0.02154	-0.07965**	-0.01891	-0.21217*
New home sales	0.0783***	-0.53409**	0.04935***	-0.0173	0.06779***	-0.03253	0.02495***	-0.00382	0.06925***	-0.12089***	-0.00394	-0.15829
Non-farm employment	0.30168***	-1.11309***	0.19942***	-0.24293***	0.34791***	0.03828	0.13642***	-0.17279***	0.17368***	-0.05267	0.05711***	-0.32357***
Pending home sales	0.12382	-0.82687***	0.02174***	-0.03272	0.02609**	0.0247	0.02837***	0.00193	0.06077***	-0.09181***	0.01005	-0.33617***
Personal consumption	0.03205	-0.201	0.06603***	-0.14244***	0.08686***	-0.27403***	0.00835	-0.03042	0.1202***	-0.17807***	0.0625***	-0.19183
Personal income	0.03464	-0.18771	0.06633***	-0.11505***	0.0995***	-0.30582***	0.01641**	-0.0583	0.10262***	-0.13314***	0.04515***	-0.21897*
Producer price index	0.12303***	-0.72893***	0.03575***	0.04448	0.08899***	-0.12987**	0.01285**	-0.03913	0.12713***	-0.09331**	0.00855	0.02351
Trade balance	0.10961***	-0.46684*	0.01732*	-0.20946***	0.03656***	0.31451***	0.00883	0.00687	0.10595***	-0.0964***	0.00668	0.03687
Announcements specific to commodity markets												
Crude Oil Weekly inventory	0.05271*	0.55262**										
Natural Gas Weekly inventory											0.59765***	-0.38025***
Observations	1193455	1190001	1190001	1190001	1180816	1180816	1138696	749168	1101836			
R ²	0.078688	0.082372	0.082372	0.082372	0.073979	0.073979	0.07119	0.074996	0.136427			

This table presents estimates of eq. 10 using financialization variable $MM_N L_{S,t}$. The equation is $\sigma_t^2 = \alpha_0 + \alpha_1 \sigma_{t-1}^2 + \alpha_2 \epsilon_t^2 + \sum_{m=1}^{22} \Phi_m D_{m,t} + \beta X_{i,t} + \sum_{k=1}^n \phi_k I_{k,t} + \sum_{h=1}^{23} \rho_h D_{h,t}$ where $I_{k,t} = D_{m,t} \cdot X_{i,t}$ and $D_{m,t}$ is a macro announcement dummy variable for release m . The Φ_m coefficients capture the instantaneous change in the conditional variance when an announcement has just occurred. The ϕ_m coefficients capture the conditional variance when an announcement has just occurred in conjunction with the level of financialization.

Table 13: Announcement (macro & commodity-specific) and financialization (SWAP-NLS) effects on futures conditional variance - Full Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m
Macroeconomic News Announcements												
Initial jobless claims	0.05822***	0.23343***	0.03845***	0.09404***	0.08327***	0.26382***	-0.01604**	0.17118***	0.07776***	0.21244***	-0.02694**	0.14805*
ADP Employment	0.01013	0.12754	0.03466***	-0.00761	0.0449***	-0.11581	-0.00362	0.13183**	-0.02324**	-0.06171	0.01926	-0.08546
CB Consumer	0.06461***	0.24214***	0.02474***	0.06479**	0.05249***	0.09368	-0.06041***	0.3733***	0.02534**	0.16265***	0.00279	-0.07654
Advance retail sales	0.09553***	0.54512***	0.07545***	-0.01412	0.11206***	-0.05012	-0.06957***	0.41281***	0.05474***	0.28103***	0.04847**	-0.17485
Building permit	0.04924***	0.2497***	0.0339***	0.04372	0.02824***	0.23562***	-0.06755***	0.32009***	0.05311***	0.13539***	-0.0195	0.37466**
Construction spending	0.08554***	0.2891***	0.05709***	0.00763	0.06924***	0.19964**	-0.07736***	0.4954***	0.05126***	0.03006	0.00924	0.08375
Consumer credit	0.02409*	0.15378*	0.00977	0.01706	0.01612**	-0.06572	0.01001	-0.03267	0.00416	-0.08387	-0.00125	0.00774
Consumer price index	0.03913**	-0.235**	0.08146***	0.20522***	0.16575***	0.29275***	0.05399**	0.17749**	0.08766***	0.4488***	-0.02157	0.35991*
Durable goods orders	0.06383***	0.28226***	0.02366***	-0.02745	0.04815***	0.19932**	-0.03407**	0.17902***	0.05428***	0.10969**	-0.04285**	0.43043***
Existing home sales	0.03173**	-0.05715	0.03054***	-0.00958	0.03451***	0.13272	-0.02703	0.2118***	0.0243**	0.16807***	0.0328	0.0211
Factory orders	0.06008***	0.1918**	0.01488**	0.19247***	0.04458***	0.23291***	-0.02611	0.21673***	0.0251**	0.0876	-0.02845	0.67174***
GDP	0.05612***	0.34455***	0.02232***	0.2477***	0.08973***	0.16653*	-0.00972	0.13666*	0.06717***	0.2449***	-0.0586**	0.36187***
Housing starts	0.04932***	0.2886***	0.02698***	0.00304	0.02806***	0.19249**	-0.06481***	0.31655***	0.0426***	0.09632*	-0.01498	0.24401
Industrial production	0.03118**	0.31942***	0.03257***	0.07688**	0.01915***	0.0245	-0.01125	0.05783	-0.00415	0.13347**	-0.02739	0.14104
New home sales	0.04779***	0.2785***	0.03898***	-0.04063	0.06594***	0.18551**	-0.0206	0.19254***	0.0276***	0.2074***	-0.02547	0.23051
Non-farm employment	0.26824***	0.8415***	0.2417***	-0.05819*	0.36074***	0.48117***	0.01816	0.47516***	0.1549***	0.18734***	0.0617***	0.06634
Pending home sales	0.0602***	0.26392***	0.01544**	0.00401	0.03015***	0.03614	-0.03653**	0.2687***	0.02869***	0.1502***	0.01378	0.07586
Personal consumption	0.00517	-0.04382	0.03137***	-0.01852	0.05089***	0.2622***	0.01457	-0.04014	0.05675***	0.31626***	-0.04473*	0.91871***
Personal income	0.00784	-0.05332	0.06246***	0.12366***	0.06217***	0.45491***	0.01766	-0.02283	0.05419***	0.23258***	-0.06483***	0.99017***
Producer price index	0.06156***	0.16722*	0.03764***	-0.04623	0.07112***	0.05176	-0.02949	0.16895**	0.09461***	0.18704***	0.02017	-0.10796
Trade balance	0.07471***	0.15035*	0.03543***	0.15511***	0.0667***	-0.75961***	0.0141	-0.0221	0.07275***	0.12279**	0.01722	-0.10359
Announcements specific to commodity markets												
Crude Oil Weekly inventory	0.11644***	0.00487									0.48444***	1.02519***
Natural Gas Weekly inventory												
Observations	1193455		1190001		1180816		1138696		749168		1101836	
R ²	0.070106		0.077156		0.080232		0.079746		0.077315		0.136579	

This table presents estimates of eq. 10 using financialization variable $SWAP_NLS_t$. The equation is $\sigma_t^2 = \alpha_0 + \alpha_1 \sigma_{t-1}^2 + \sum_{m=1}^{22} \Phi_m D_{m,t} + \beta X_{i,t} + \sum_{k=1}^n \phi_k I_{kt} + \sum_{h=1}^{23} \rho_h D_h$ where $I_{kt} = D_{m,t} \cdot X_{i,t}$ and $D_{m,t}$ is a macro announcement dummy variable for release m . The Φ_m coefficients capture the instantaneous change in the conditional variance when an announcement has just occurred. The ϕ_m coefficients capture the conditional variance when an announcement has just occurred in conjunction with the level of financialization.

Table 14: Announcement (macro & commodity-specific) and financialization (NLS) effects on futures returns (Kurov) - COVID Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m
Macroeconomic News Announcements												
Initial jobless claims	-0.05304	0.15319	0.67456***	-1.29179***	0.07436	-0.34916	-0.01207	-0.07707	-0.01584	0.07139	-0.11231**	-1.56397***
ADP Employment	0.22435	-0.60967	-0.44274***	0.90844***	0.70483***	-3.01802***	0.02568***	0.16286	0.00351	-0.01967	-0.1205**	-2.93345**
CB Consumer	0.01593	-0.05564	-0.3178***	0.71482**	-0.00624	0.06684	-0.02688	0.13241	-0.02079	0.10325	0.06404	0.39286
Advance retail sales	-0.05187	0.33324	-0.4164***	0.961***	0.20226**	-0.82729*	0.0121	-0.07264	-0.01557	0.09594	-0.02402	-0.34742
Building permit	0.03941	0.03705	-0.05159	0.11245	-0.11363*	0.40468	0.03852**	-0.16867**	0.0112	0.00524	0.14075***	0.99814*
Construction spending	0.65898**	-2.88345**	-0.0363	0.03066	0.07823	-0.48804	0.01588	-0.16719	0.01435	0.114	-0.13218*	-2.26882**
Consumer credit	-0.0394	0.12984	-0.04807	0.10213	0.09214**	-0.39242**	-0.00315	0.06116	-0.01061	0.13497	-0.01933	-0.12264
Consumer price index	0.31416*	-1.56755**	-1.09536***	2.65481***	-0.19543**	0.46196	-0.08642***	0.4635**	-0.08641***	0.22573*	-0.01456	0.15191
Durable goods orders	0.3507	-1.58708	-0.48512***	1.08308***	0.22685*	-1.10379*	-0.03552	0.1118	0.0217	-0.3454	0.00889	-0.33582
Existing home sales	0.37743	-1.8963*	-0.1024	0.30048	0.24303**	-1.09853**	-0.02365	0.1084	0.03241	-0.18899	0.08941	-0.06124
Factory orders	0.20435	-0.68398	-0.02856	0.01114	-0.06706	0.21191	0.04305*	0.09729	0.02654	-0.31984	0.26264**	0.86038
GDP	-0.20342	0.86461	-0.67894***	1.57151***	-0.18048	0.75512	-0.05325***	0.21315**	-0.0513**	-0.03363	-0.055**	-0.40989
Housing starts	0.36735**	-1.8038**	-0.03907	0.08773	-0.04173	0.00353	-0.02956	0.16777	0.02437	-0.28613	-0.16296***	2.02325***
Industrial production	-0.17304	0.64564	-0.17486**	0.50872***	-0.00921	-0.19491	-0.02577	0.08019	0.00533	0.04843	-0.04705	-0.36049
New home sales	-0.23104	0.98392	-0.25247**	0.63549**	0.06011	-0.42542	-0.00855	0.01137	0.02505	-0.06303	0.00508	1.08808*
Non-farm employment	-0.2731	1.19546	-2.14386***	4.54338***	0.78667***	-3.34173**	0.0252***	0.52836*	0.02156	-0.18188	-0.19984**	-5.81269**
Pending home sales	-0.06442	0.34858	-0.03672	0.05687	-0.00501	0.03113	0.00715	-0.00186	-0.01095	0.15398	-0.05828	-0.67781
Personal consumption	0.11481	-0.56463	-0.24542***	0.49336***	-0.00707	0.05437	0.00234	-0.00638	0.01645	0.12192	0.05777	2.02525**
Personal income	-0.04283	0.0547	0.39444	-0.86742	-0.01019	0.01571	-0.01784*	-0.27411*	-0.00134	-0.13281	-0.13135	-3.1879
Producer price index	-0.16712	0.84336	-0.15421	0.30151	-0.03584	0.11642	0.00967	-0.04937	0.02245	0.20957	-0.03629	0.43642
Trade balance	-0.73246	2.12028	-0.33167	0.53286	-0.21421	-0.08428	-0.04745	-0.53524	-0.58781***	0.6007**	-0.07978	6.76062**
Announcements specific to commodity markets												
Crude Oil Weekly inventory	-0.06204	-0.71763**										
Natural Gas Weekly inventory												
Observations	167663	167808	167808	167513	167800	99525	167472					
R ²	0.004142	0.003897	0.003897	0.001678	0.000988	0.001109	0.001805					

This table presents estimates of eq. 6, $R_t^{t+\tau} = \alpha + \sum_{m=1}^{22} \gamma_m S_{m,t} + \delta X_{t,i} + \sum_{m=1}^{22} \theta_m (S_{m,t} \cdot X_t) + \beta R_{t-\tau}^t + \epsilon_t$ using the method proposed by Kurov et al. (2019) and financialization variable NLS_t . The γ_m coefficients capture the instantaneous change in return when an announcement has just occurred and especially if that announcement was unanticipated. The coefficients θ_m capture the instantaneous change in return when an announcement has just occurred in conjunction with the level of financialization.

Table 15: Announcement (macro & commodity-specific) and financialization (NLS) effects on futures conditional variance - COVID Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m
Macroeconomic News Announcements												
Initial jobless claims	-0.09636	3.35298*	0.02294	-0.15107	0.19983***	-1.07585***	0.01309	-0.04209	0.0834***	-0.14983	0.00017	0.15059
ADP Employment	0.65757*	-4.72734***	0.06518	-0.34747*	0.28162***	-0.14248	0.06963***	-0.06428	-0.09531**	-0.20166	0.0188	0.66031
CB Consumer	-0.94417***	-0.62403	0.21887***	-0.52652**	0.10017	-1.30271***	0.00055	-0.06044	0.03359	-0.23366	0.02124	0.0448
Advance retail sales	0.12243	-2.33292	0.26516**	-0.68949***	0.41279***	-0.5248	0.02151	-0.28203***	0.00377	-0.2267	0.05886	-0.29694
Building permit	0.48651	1.59467	-0.28847***	-0.00757	0.11495	0.26274	0.02049	0.04902	0.04828	-0.03058	0.03644	-0.69603
Construction spending	-0.30513	-1.01085	0.0425	-0.05809	-0.03163	-0.22089	-0.00162	0.07112	-0.00531	0.16762	0.00908	-0.03468
Consumer credit	0.2047	-1.53043	0.02835	-0.10382	0.09498	-0.71454*	-0.01401	-0.32437***	0.02753	0.08909	0.01673	-0.33224
Consumer price index	0.30876	0.6181	0.14219	-0.02822	0.26772***	0.15355	0.13431***	0.17237*	-0.02796	-0.04975	0.01102	-0.71745
Durable goods orders	-0.14714	1.43927	0.03029	0.21013	0.00619	-0.58963*	-0.0313*	-0.07651	0.0497	-0.06524	-0.10203**	-0.07702
Existing home sales	-0.21432	0.77755	-0.04377	0.29942	0.18678*	0.04353	0.0559***	-0.09597	0.18962***	-0.06904	0.08217*	-1.33778**
Factory orders	-0.10802	-0.49357	-0.09774	0.1993	0.01168	0.57755	0.03064*	0.21455*	0.0198	0.13061	-0.03477	-0.97256
GDP	0.08325	-2.59059	-0.02549	0.62377***	-0.03792	-0.55955*	-0.01721	-0.34547***	0.00297	-0.23786	-0.11512**	-0.71962
Housing starts	0.54768	1.97644	-0.26025***	0.05228	0.12271	0.48892	0.02738*	-0.06923	0.04611	-0.37882*	0.01934	0.67079
Industrial production	-0.45243	-0.1923	-0.03451	0.27323*	-0.15184	-0.36886	-0.0113	-0.07301	0.08228*	0.01327	0.00786	-0.48328
New home sales	0.08668	-0.4191	0.07095	-1.44824***	0.23089***	-0.99621***	-0.01913	-0.04275	0.02849	0.3294**	-0.01434	1.36646***
Non-farm employment	0.17025	1.42351	0.80207***	-0.65071***	0.54701***	-0.73662**	0.12699***	0.1289	0.04275	0.27753	0.09921**	-0.59763
Pending home sales	-0.29046	-0.7952	0.31423***	-0.29805	0.20897***	-0.03802	-9e-04	-0.06165	0.06603	-0.06209	0.03494	-3.1579***
Personal consumption	0.14833	-1.21877	0.14734	-0.22859	0.04742	0.24194	0.00385	-0.0286	0.06989	-0.03114	-0.07238	-2.00898***
Personal income	0.25973	-0.28073	0.12412	0.46855**	-0.00291	-0.54811	0.00321	-0.00955	0.0741*	-0.51366**	-0.06398	0.07551
Producer price index	0.08816	0.43065	-0.15708	-0.35724*	0.22355***	-0.59363*	-0.00614	-0.03986	0.09817**	-0.15742	-0.04277	0.93243*
Trade balance	-0.01952	0.74449	0.17818**	0.0001	0.17335**	0.0001	0.03429**	NA	0.10701***	0.0001	0.07544*	-0.17694
Announcements specific to commodity markets												
Crude Oil Weekly inventory	-0.00049	0.0001									0.53992***	0.0001
Natural Gas Weekly inventory											167472	
Observations	167663		167808		167513		167800		99525		0.137333	
R ²	0.026858		0.104799		0.072185		0.086944		0.047558			

This table presents estimates of eq. 10 using financialization variable NLS_t . The equation is $\sigma_t^2 = \alpha_0 + \alpha_1 \sigma_{t-1}^2 + \alpha_2 \epsilon_t^2 + \sum_{m=1}^{22} \Phi_m D_{m,t} + \beta X_{i,t} + \sum_{k=1}^n \phi_k I_{kt} + \sum_{h=1}^{23} \rho_h D_{h,t}$ where $I_{kt} = D_{m,t} \cdot X_{i,t}$ and $D_{m,t}$ is a macro announcement dummy variable for release m . The Φ_m coefficients capture the instantaneous change in the conditional variance when an announcement has just occurred. The ϕ_m coefficients capture the conditional variance when an announcement has just occurred in conjunction with the level of financialization.

Table 16: Announcement (macro & commodity-specific) and financialization (MM-NLS) effects on futures returns (Kurov) - COVID Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m
Macroeconomic News Announcements												
Initial jobless claims	0.01284	-0.42931	0.18523***	-0.60124***	-0.18006***	1.43876***	-0.01157	-0.0734	-0.01816	0.06554	-0.01707	-0.54064
ADP Employment	0.29525	-1.27353	-0.20069***	0.83071**	-0.00499	-0.26184	0.02301***	0.13008	0.00089	0.0084	-0.02549*	-0.41182
CB Consumer	0.07655	-0.51606	-0.09771**	0.47099*	-0.06772	0.46189	-0.04213	0.17658	-0.03088	0.10234	-0.01077	1.92141*
Advance retail sales	-0.02923	0.34904	-0.07305***	0.4339***	-0.01274	0.2268	0.01271	-0.0694	-0.01833	0.09338	-0.00873	0.00984
Building permit	-0.09509	1.00771	0.02568	-0.19516	-0.09011*	0.39078	0.04005**	-0.13851*	0.00371	0.04582	0.08024**	0.86233**
Construction spending	0.41652**	-2.77195**	-0.0419	0.08539	0.02789	-0.34852	0.01859	-0.13908	0.01249	0.09305	-0.0121	-1.19446**
Consumer credit	-0.00923	-0.01745	-0.02585	0.12077	0.05161**	-0.29881**	-0.00532	0.0638	-0.03173	0.19807	-0.01666	0.08127
Consumer price index	-0.24917	1.86806*	-0.43977***	2.23921***	0.19333***	-0.58014**	-0.07806***	0.27258*	-0.10369**	0.20287	-0.03498	0.23866
Durable goods orders	0.09373	-0.74428	-0.13019***	0.56867**	-0.04308	0.18076	-0.0335	0.07762	0.02374	-0.23976	0.04727	-0.54832
Existing home sales	0.74825***	-5.48168***	-0.10481	0.80092*	-0.13335	0.7541	-0.01008	0.04062	0.03378	-0.12891	0.1072	-0.39774
Factory orders	0.00864	0.26749	-0.05923	0.18085	-0.00838	-0.08036	0.04497	0.03837	0.08834	-0.5174**	0.21529***	1.18248
GDP	-0.01706	-0.08802	-0.33648***	1.71065***	-0.00324	-0.10068	-0.0603***	0.19003***	-0.04116	-0.0659	0.01248	-0.86484
Housing starts	0.21757**	-1.76668**	-0.01221	0.05853	0.00456	-0.24308	-0.03423*	0.15038*	0.03046	-0.22306	0.03863	0.9263***
Industrial production	0.34103**	-2.13714*	-0.00293	-0.20915*	-0.07816	0.16609	-0.02928*	0.09407	0.00574	0.03016	-0.02946	-0.32844
New home sales	-0.23837	1.50728	-0.12033***	0.7806***	0.04347	-0.47414**	-0.00786	0.00541	0.03361	-0.07157	-0.05379	0.74563
Non-farm employment	-0.38931	2.35649*	-0.68355***	2.98988***	0.4105***	-2.25335***	0.01543*	0.49231*	0.07231**	-0.68623*	0.01033	1.53154
Pending home sales	-0.00301	0.15189	-0.04072	0.13567	-0.05453	0.29881	0.00433	0.02053	-0.01675	0.15366	-0.01676	-0.80029
Personal consumption	0.04548	-0.40212	-0.12306***	0.46241***	0.01365	-0.07518	0.00234	-0.00958	0.02166	0.048	-0.03182	0.06593
Personal income	-0.05495	0.14342	0.00497	-0.03505	0.14836	-0.94084	-0.01037	-0.2533*	-0.05332	0.26052	0.01097	-0.98839
Producer price index	-0.10278	0.85437	-0.06206	0.2268	0.03505	-0.32221	0.0107	-0.04785	0.02766	0.1277	-0.06587*	0.44089
Trade balance	-1.09678*	5.61848	0.00987	-0.7717	-0.28472*	0.23575	-0.02639	-0.50428	-0.67818***	0.80536**	-0.66975***	7.55158***
Announcements specific to commodity markets												
Crude Oil Weekly inventory	0.03025	-1.67095***										
Natural Gas Weekly inventory												
Observations	167663	167808	167808	167513	167800	167800	167800	167800	99525	167472		
R ²	0.004087	0.003488	0.001728	0.001728	0.000983	0.000983	0.000983	0.000983	0.001166	0.001653		

This table presents estimates of eq. 6, $R_t^{t+\tau} = \alpha + \sum_{m=1}^{22} \gamma_m S_{m,t} + \delta X_{t,i} + \sum_{m=1}^{22} \theta_m (S_{m,t} \cdot X_t) + \beta R_{t-\tau}^t + \epsilon_t$ using the method proposed by Kurov et al. (2019) and financialization variable $MM_N L S_t$. The γ_m coefficients capture the instantaneous change in return when an announcement has just occurred and especially if that announcement was unanticipated. The coefficients θ_m capture the instantaneous change in return when an announcement has just occurred in conjunction with the level of financialization.

Table 17: Announcement (macro & commodity-specific) and financialization (SWAP-NLS) effects on futures returns (Kurov) - COVID Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m
Macroeconomic News Announcements												
Initial jobless claims	-0.3559	-1.52603	0.01394	0.02196	-0.00342	-2.17155***	-0.08446*	0.41894*	-0.1916***	1.05912***	-0.08847***	1.77686**
ADP Employment	0.08035	0.06661	-0.31471**	-0.78958*	-0.11333**	-1.6728	0.22634***	-1.05459***	0.00289	-0.00433	-0.05779**	1.40793
CB Consumer	0.54866	2.62593	-0.24794*	-0.7008*	0.0655	1.59409*	0.08546	-0.61999	0.02718	-0.20183	0.0479	0.01052
Advance retail sales	0.83956***	4.05137***	-0.30872***	-0.94688***	0.03121*	0.27971	-0.03042	0.22433	0.02659	-0.15492	-0.01285	0.09216
Building permit	0.44978**	2.31848**	-0.13443	-0.39083	0.0493**	0.60257*	-0.06394**	0.53905**	0.01289	-0.0059	0.16126***	-1.0246**
Construction spending	0.27632	1.39045	0.23373	0.72075	-0.00773	0.60794	-0.14991**	0.8877**	0.05101	-0.12208	-0.11196	1.69267*
Consumer credit	0.00461	0.08012	-0.04758	-0.12187	0.01797	0.32756*	0.03715	-0.19518	0.02984	-0.17111	-0.0298	0.23179
Consumer price index	-0.05112	-0.32176	-0.57345***	-1.58847**	0.12469***	0.6901*	0.28822***	-1.98064***	0.0068	-0.4177*	-0.00893	-0.14206
Durable goods orders	0.13207	0.71558	-0.38513***	-1.10042***	-0.03065	-0.83509	0.06604	-0.59511	0.01982	-0.40849	0.01972	-0.35887
Existing home sales	-0.04459	-0.02126	0.11253	0.26883	-0.04172	-1.15384	0.09829*	-0.67851*	-0.01171	0.10709	0.11297	-0.25142
Factory orders	0.18355	0.64725	0.25872	0.84187	-0.029	-0.14117	0.0834	-0.20274	-0.14787*	0.80132*	0.21908**	-0.23554
GDP	0.46231***	2.30788***	0.19991	0.68373	0.05351	1.71279	0.05994**	-0.56015***	-0.052	0.00596	-0.05958*	0.2858
Housing starts	-0.32851	-1.71555	-0.07149	-0.21937	-0.03948	0.03702	-0.01791	0.10276	-0.10283*	0.58656*	0.16249***	-1.56023***
Industrial production	0.17043	1.00224	0.08398	0.37057*	0.06373***	-0.34937	-0.08247*	0.46599	0.04412	-0.20798	-0.00941	-0.37177
New home sales	-0.03078	-0.06343	0.18592	0.58193	-0.01074	0.53075	0.01912	-0.18141	0.01301	0.02973	0.02364	-0.82941*
Non-farm employment	2.07613*	10.49944*	-3.88548***	-10.45671***	0.14035**	-2.11552	0.39987**	-1.96803**	-0.38964**	1.75421**	-0.04663	1.68979
Pending home sales	0.13424	0.54767	0.02888	0.11045	0.02128	0.43282	0.00606	0.00543	0.06637	-0.30888	-0.01983	-0.0278
Personal consumption	0.23334	1.13462	-0.34704***	-0.96377***	0.01301	0.48689	-0.02546	0.13933	0.14246**	-0.56744	0.00804	-1.01067
Personal income	0.48466	2.52886	-0.07014	-0.18887	-0.08014	-1.76992	-0.20808*	1.03538*	4e-04	-0.07478	-0.09644	3.03041*
Producer price index	-0.37035	-1.91965	0.22676	0.72619	2e-04	0.30589	-0.0294	0.22461	0.04012	0.04467	-0.04055	-0.30514
Trade balance	-2.43297	-9.82726	-0.2231	-0.3476	0.22495**	0.04987	-0.31868*	1.15728	-0.17144	-1.82171***	-0.13828	-3.43949*
Announcements specific to commodity markets												
Crude Oil Weekly inventory	-0.71319***	-2.29368***										
Natural Gas Weekly inventory											-0.13552**	-0.31667
Observations	167663	167808	167808	167808	167513	167800	167800	99525	99525	99525	167472	167472
R ²	0.00438	0.00342	0.00342	0.00342	0.001651	0.001399	0.001399	0.001579	0.001579	0.001579	0.001734	0.001734

This table presents estimates of eq. 6, $R_t^{t+\tau} = \alpha + \sum_{m=1}^{22} \gamma_m S_{m,t} + \delta X_{t,i} + \sum_{m=1}^{22} \theta_m (S_{m,t} \cdot X_t) + \beta R_{t-\tau}^t + \epsilon_t$ using the method proposed by Kurov et al. (2019) and financialization variable $SWAP_N LS_t$. The γ_m coefficients capture the instantaneous change in return when an announcement has just occurred and especially if that announcement was unanticipated. The coefficients θ_m capture the instantaneous change in return when an announcement has just occurred in conjunction with the level of financialization.

Table 18: Announcement (macro & commodity-specific) and financialization (MM-NLS) effects on futures conditional variance - COVID Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m
Macroeconomic News Announcements												
Initial jobless claims	-0.04461	2.85159*	-0.00467	-0.05895	0.15242***	-0.16088	0.01131	0.0023	0.08837***	-0.09377	-0.00605	0.21895
ADP Employment	-0.34572	4.05873**	0.01157	-0.11669	0.05935	0.18762	0.06509***	-0.05024	-0.08643*	-0.20231	0.006	0.14602
CB Consumer	-0.49745*	1.3217	0.09255***	-0.17445	0.033	-1.30168***	0.00077	-0.05129	0.05362	-0.20067	-0.02037	0.32092
Advance retail sales	-0.18724	-0.76763	0.07227**	-0.53535***	0.34259***	-0.62714**	0.02209	-0.22841***	0.01804	-0.26755	0.04779	0.50548
Building permit	0.10048	1.66375	-0.09165***	0.14266	0.10536**	0.33833	0.02134	0.06065	0.07337	-0.07325	0.04532	-0.4211
Construction spending	-0.19798	0.62185	0.01384	0.02905	-0.03106	0.10504	-0.0047	0.06039	0.00351	0.21481	0.05824*	0.03839
Consumer credit	-0.09134	1.2164	-0.00171	0.00941	0.02411	-0.86118***	-0.01479	-0.26289***	0.0054	0.13574	0.01831	0.1331
Consumer price index	-0.16864	2.371	0.09632***	-0.4022**	0.25226***	0.04154	0.13703***	0.14927*	-0.0415	-0.13397	0.03385	-0.36319
Durable goods orders	-0.33507	-3.41535*	0.08977***	-0.29773*	0.03393	-0.50163*	-0.0334*	-0.06481	0.06564	-0.19562	-0.05252	0.06643
Existing home sales	0.56294**	1.05599	-0.00734	0.18055	0.13902***	-0.09197	0.05677***	-0.10169	0.21109***	-0.12753	0.08619***	-0.60224
Factory orders	-0.08984	1.60278	-0.00245	0.27924	0.03794	0.72946**	0.03449**	0.22021**	0.03417	0.1381	-0.05311*	-0.39455
GDP	-0.23953	-0.41313	0.01217	0.5264***	-0.03592	-0.69722***	-0.02595	-0.2736***	-0.01096	-0.2769	-0.04993	0.0364
Housing starts	0.0599	1.01861	-0.0897***	0.19485	0.11759**	0.16098	0.0276	-0.06027	0.07192	-0.3868*	0.06048*	0.68109
Industrial production	-0.17177	-3.74853***	-0.04685	-0.3567***	-0.06541	-0.53071***	-0.01066	-0.06344	0.10981**	0.0315	-0.03748	-0.14918
New home sales	-0.01003	0.17466	0.08614***	-0.57164***	0.1953***	0.03185	-0.02271	-0.00031	0.03605	0.3872**	-0.00739	0.72281*
Non-farm employment	0.05604	3.04568	0.28587***	-0.41916**	0.30708***	0.00215	0.12292***	0.10831	0.00414	0.23142	0.0035	0.36589
Pending home sales	-0.40328	-0.36436	0.11405***	-0.34236*	0.03729	-0.29147	-0.00213	-0.07714	0.0475	-0.06213	0.06356*	-2.0588***
Personal consumption	0.03999	-2.13154	0.08202**	-0.28124*	0.09221	-0.17986	0.00857	-0.04301	0.07635	-0.09191	0.13395***	-0.64605
Personal income	0.29453	-0.5006	0.07845***	-0.74149***	0.08435	-0.51294*	0.00589	0.00579	0.08636*	-0.41902*	0.06267*	0.26214
Producer price index	0.09115	-0.1613	0.09431***	-0.52717**	0.18854***	-0.68457**	-0.00799	0.01655	0.12402**	-0.19304	-0.05209	0.16588
Trade balance	0.08689	-1.05789	0.12133***	0.0001	0.15697***	0.0001	0.02785	0.0001	0.12659***	0.0001	0.01636	0.97422***
Announcements specific to commodity markets												
Crude Oil Weekly inventory	0.31257	0.0001									0.53582***	0.0001
Natural Gas Weekly inventory												
Observations	167663		167808		167513		167800		99525		167472	
R^2	0.036079		0.110085		0.072735		0.087602		0.04779		0.135707	

This table presents estimates of eq. 10 using financialization variable NN_NLS_t . The equation is $\sigma_t^2 = \alpha_0 + \alpha_1 \sigma_{t-1}^2 + \alpha_2 \varepsilon_t^2 + \sum_{m=1}^{22} \Phi_m D_{m,t} + \beta X_{i,t} + \sum_{k=1}^n \phi_k I_{k,t} + \sum_{h=1}^{23} \rho_h D_{h,t}$ where $I_{k,t} = D_{m,t} \cdot X_{i,t}$ and $D_{m,t}$ is a macro announcement dummy variable for release m . The Φ_m coefficients capture the instantaneous change in the conditional variance when an announcement has just occurred. The ϕ_m coefficients capture the conditional variance when an announcement has just occurred in conjunction with the level of financialization.

Table 19: Announcement (macro & commodity-specific) and financialization (SWAP-NLS) effects on futures conditional variance - COVID Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m
Macroeconomic News Announcements												
Initial jobless claims	-0.02922	4.03858	-0.00383	-0.44581*	0.13311***	0.68878	0.01537	0.61188**	0.08235**	0.3035	-0.00311	-0.38407
ADP Employment	0.89022	-1.01674	-0.14995*	-0.24589	0.06432**	-0.03518	-0.03627	0.12394	-0.15721*	0.71733*	0.04367	-0.88879**
CB Consumer	-0.16354	2.14791	-0.01169	0.24884	0.0654**	1.38311***	-0.02742	0.18772	-0.11676	0.71702	0.05968	0.12444
Advance retail sales	0.44938	-0.51159	0.12493	-0.71539*	0.18362***	0.93335**	-0.0161	0.80474***	-0.14029	0.38779	0.04598	0.72141*
Building permit	-0.11462	1.52827	-0.2366*	0.13656	0.04223	-0.36732	-0.13936***	-0.15939	-0.03245	0.18738	-0.0072	0.68219
Construction spending	0.35162	-0.3077	0.08577	0.04062	0.01138	0.2621	0.02996	-0.18551	-0.04229	-0.26997	-0.00935	0.07279
Consumer credit	-0.06546	-0.55449	0.01866	-1.87127***	0.05736*	0.01452	0.02409	2.08176***	0.08719	0.01319	0.01232	0.49723
Consumer price index	-0.11343	1.27139	-0.5234***	-0.22151	0.11112***	-0.57925	-0.25742***	-0.01637	-0.02735	0.16253	-0.01576	0.43095
Durable goods orders	0.25844	-3.94367	-0.05658	0.27322	0.01283	0.81324**	-0.00975	-0.03792	0.01667	0.8857**	-0.09599*	-0.18731
Existing home sales	-0.77611	4.12467	0.13657	-0.31927	0.0933***	-0.22595	0.05463	0.31807	0.01878	0.0258	0.10396**	0.92352**
Factory orders	0.9199	1.70409	-0.07701	-0.03624	0.01073	-0.67484	-0.03092	-0.44596*	0.01082	-0.22664	-0.03744	1.0731**
GDP	0.34501	-1.88465	0.04424	-0.64959*	0.06082*	1.02371***	0.08284*	1.10052***	0.05347	0.40694	-0.15514***	0.946**
Housing starts	-0.40274	0.0779	-0.21414*	-0.03151	0.04666	-0.53977	-0.18703***	0.05743	-0.03861	0.80121*	-0.0186	-0.43125
Industrial production	-0.0123	-2.49043	-0.02319	0.20445	-0.06506**	0.25795	-0.02684	0.15867	-0.08525	0.04713	0.00632	0.29616
New home sales	-0.07277	1.40281	0.4137***	1.62105***	0.16036***	0.36746	0.02375	0.47451*	0.0387	-0.38979	-0.01679	-0.90365**
Non-farm employment	0.38153	-0.79927	0.73582***	0.87849***	0.33138***	1.02249**	0.04335	-0.45437*	0.1309	-0.34504	0.09655*	0.6631
Pending home sales	-0.16135	2.17731	0.33625***	-0.09161	0.08945***	-0.37429	0.0886**	0.17491	0.1461*	0.30697	0.01209	2.49867***
Personal consumption	0.4467	-0.26628	-0.0097	-0.25217	0.01905	-0.42262	-0.03202	0.21254	0.00779	0.2457	-0.10497**	2.07186***
Personal income	-0.05879	-3.6405	-0.05739	1.06157***	0.03155	1.21226***	-0.03398	-0.03706	0.02667	0.69591	-0.11986**	-0.22351
Producer price index	-0.7306	3.86034	0.40256***	-0.23286	0.1636***	1.00912**	-0.00112	0.23935	-0.07333	0.37691	-0.02853	-0.98772**
Trade balance	0.88337	0.15135	-0.05401	0.0001	0.08634***	0.0001	-0.0093	0.0001	0.02746	0.0001	0.10671**	-0.02417
Announcements specific to commodity markets												
Crude Oil Weekly inventory	0.18957	0.0001									0.55306***	0.0001
Natural Gas Weekly inventory												
Observations	167663		167808		167513		167800		99525		167472	
R ²	0.031995		0.09131		0.073455		0.085618		0.04391		0.135931	

This table presents estimates of eq. 10 using financialization variable $SWAP_NLS_t$. The equation is $\sigma_t^2 = \alpha_0 + \alpha_1 \sigma_{t-1}^2 + \sum_{m=1}^{22} \Phi_m D_{m,t} + \beta X_{i,t} + \sum_{k=1}^n \phi_k I_{k,t} + \sum_{h=1}^{23} \rho_h D_h$ where $I_{k,t} = D_{m,t} \cdot X_{i,t}$ and $D_{m,t}$ is a macro announcement dummy variable for release m . The Φ_m coefficients capture the instantaneous change in the conditional variance when an announcement has just occurred. The ϕ_m coefficients capture the conditional variance when an announcement has just occurred in conjunction with the level of financialization.

Table 20: Announcement (macro & commodity-specific) and financialization (NLS) effects on futures returns (Kurov) - ZLB Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m
Macroeconomic News Announcements												
Initial jobless claims	-0.70429***	3.78529***	1.09087***	-2.25841***	-1.39832***	4.71356***	-0.12351***	0.17344	0.12053	-0.00437	-0.0518	0.20917
ADP Employment	1.39435***	-7.12987***	-3.84009***	8.90483***	1.98621***	-5.40179***	0.24898**	-1.03637	0.04779	-0.64322	1.06705*	2.42274
CB Consumer	0.25256***	-1.62456***	-0.04746**	0.08402	0.06657**	-0.29594*	0.03378***	-0.06595	-0.11484**	0.19093*	0.0321	-0.07378
Advance retail sales	0.50785***	-2.82851***	-0.65198***	1.35297***	0.51345***	-1.65641***	0.00957	-0.64197***	-0.15308	0.2109	0.22209*	0.79246
Building permit	0.03023	-0.13412	-0.01199	-0.05338	-0.04015	0.00913	-0.00318	-0.03226	-0.01608	-0.03873	-0.00869	0.09105
Construction spending	0.03806	-0.44559*	0.04202	-0.121	0.06492	-0.22008	-0.00302	-0.37014***	0.09459	-0.13789	-0.11753*	-0.51691
Consumer credit	-0.01035	0.01027	-0.03464**	0.10232**	0.02475*	-0.18162***	0.00614	0.10737	0.04239	-0.0683	0.04942	0.2199
Consumer price index	-0.05367*	0.22486	-0.05491**	0.14857*	-0.0711**	0.2472	-0.00286	-0.27025**	0.02297	-0.1113	0.05088	0.20721
Durable goods orders	0.22761***	-1.12323***	-0.1184***	0.34599***	0.10638***	-0.58869***	0.02373***	0.15346	0.1488***	-0.18161**	-0.03788	-0.34522
Existing home sales	0.06734***	-0.1611	-0.09425***	0.24307***	-0.07379	0.34111*	0.05257***	-0.15687*	-0.05244	0.0895	0.094	0.47253
Factory orders	-0.02188	0.16758	-0.06297*	0.11496	-0.07732*	0.21643	-0.00072	-0.03245	0.00867	-0.03692	0.08812	0.56325
GDP	0.09399***	-0.41028*	-0.19392***	0.29743***	0.33782***	-0.191923***	0.04529***	0.16728	-0.26445***	0.37966**	-0.01533	-0.24002
Housing starts	0.15596***	-0.7602***	-0.11085***	0.14525**	0.1609***	-0.39369**	0.02807**	0.1126	-0.01944	0.01178	-0.02819	-0.12451
Industrial production	0.12147**	-0.60138**	-0.04582	0.08981	-0.08024*	0.23464	0.00612	-0.08287	-0.14273*	0.21769	0.029	-0.01512
New home sales	0.15372***	-0.69244***	-0.20306***	0.48779***	0.11643***	-0.33441*	0.0736***	-0.00415	-0.17056	0.28999	0.04644	0.13686
Non-farm employment	6.45167***	-25.2801***	-8.95331***	18.07887***	7.96384***	-27.72306***	1.57712***	0.35965	-0.74642	1.70491	-1.55898**	-17.77143***
Pending home sales	0.14767***	-0.90112***	0.00245	-0.02759	-0.01856	0.09937	0.03845***	-0.20744*	-0.11909	0.21728	-0.01862	-0.31759
Personal consumption	0.00221	0.19129	-0.07321*	0.19355*	0.02273	-0.12291	0.02338	0.18267	-0.03361	0.02948	-0.04455	-0.20038
Personal income	-0.16673	1.15899	0.0385	-0.14958	-0.25816	1.09273	0.01267	-0.53643	-0.31864	0.56008	-0.62609***	-4.00139***
Producer price index	0.07284***	-0.42142***	-0.06599***	0.14536**	0.06633**	-0.24047*	0.00701	-0.08332	0.02887	-0.00862	-0.0945**	-0.41908
Trade balance	-0.00985	-0.00227	-0.04424	0.07583	-0.02616	0.09349	-0.0116	0.03755	0.07156	-0.1219	-0.02821	-0.32178
Announcements specific to commodity markets												
Crude Oil Weekly inventory	-0.14108***	-0.0825										
Natural Gas Weekly inventory												
Observations	495652		500857		492438		485244		315201		448530	
R^2	0.003123		0.003413		0.001762		0.000693		0.000439		0.002058	

This table presents estimates of eq. 6, $R_t^{t+\tau} = \alpha + \sum_{m=1}^{22} \gamma_m S_{m,t} + \delta X_{t,i} + \sum_{m=1}^{22} \theta_m (S_{m,t} \cdot X_t) + \beta R_{t-\tau}^t + \epsilon_t$ using the method proposed by Kurov et al. (2019) and financialization variable NLS_t . The γ_m coefficients capture the instantaneous change in return when an announcement has just occurred and especially if that announcement was unanticipated. The coefficients θ_m capture the instantaneous change in return when an announcement has just occurred in conjunction with the level of financialization.

Table 21: Announcement (macro & commodity-specific) and financialization (NLS) effects on futures conditional variance - ZLB Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m
Macroeconomic News Announcements												
Initial jobless claims	0.10694***	-0.42408***	0.05269***	-0.00488	0.10043***	-0.16325***	0.03223***	-0.03834	0.16713***	-0.16984***	-0.02784	-0.05767
ADP Employment	0.06941***	-0.53219***	0.10252***	-0.2171***	0.07215***	-0.272**	0.03539***	-0.05173	0.00482	0.01455	-0.00141	-0.08407
CB Consumer	0.16537***	-0.87541***	0.05819***	-0.07511	0.04967**	0.07337	0.0439***	-0.14431**	0.09397*	-0.11162	-0.00335	-0.01169
Advance retail sales	0.18938***	-0.86228***	0.13967***	-0.23979***	0.13996***	-0.30885***	0.05161***	-0.25845***	0.06489	-0.00631	-0.04253	-0.33072
Building permit	0.09698***	-0.52935***	0.12162***	-0.24222***	0.14168***	-0.4931***	0.02762***	-0.11219	0.03091	0.05324	-0.04738	-0.30239
Construction spending	0.2325***	-1.18295***	0.15062***	-0.30249***	0.12038***	-0.33192***	0.066***	-0.07152	0.02884	0.03642	0.03301	0.02156
Consumer credit	0.0453**	-0.22174	0.02772*	-0.06164	0.03052	-0.05207	0.00668	0.10916	-0.07063	0.13114	0.01441	0.06766
Consumer price index	0.04682	-0.40441*	0.14873***	-0.30026***	0.11292***	-0.23301	0.01046	-0.05358	0.05319	-0.0272	-0.00815	-0.03531
Durable goods orders	0.14852***	-0.70578***	0.04542***	0.00033	0.01576	0.27348**	0.02838***	-0.06921	0.1074**	-0.06132	0.01688	0.0068
Existing home sales	0.02751	-0.05921	0.06524***	-0.06524	0.05876**	-0.00113	0.02689***	-0.17408**	0.00283	0.00325	0.04728	0.08737
Factory orders	0.06571***	-0.3652**	-0.00722	0.10438**	-0.02243	0.23381**	0.02224**	0.03656	0.10924**	-0.16832*	-0.06361	-0.68095***
GDP	0.16121***	-0.91541***	0.11461***	-0.16196***	0.15722***	-0.29682**	0.04996***	-0.04091	0.26447***	-0.37431***	-0.06994	-0.2124
Housing starts	0.08035***	-0.40519**	0.08746***	-0.15567***	0.10646***	-0.32943***	0.0307***	-0.14564**	0.02419	0.06669	-0.05308	-0.30261
Industrial production	0.0652***	-0.56456***	0.0062	0.03609	0.03259	-0.11575	0.00655	-2e-04	0.0695	-0.16238*	-0.04995	-0.19915
New home sales	0.11635***	-0.51095***	0.07002***	-0.04171	0.06764***	-0.03879	0.04642***	0.04233	0.32761***	-0.53084***	-0.01708	-0.16199
Non-farm employment	0.41625***	-1.34407***	0.42629***	-0.49897***	0.5661***	-1.06553***	0.18526***	0.15465**	0.18194***	-0.01315	0.02026	-0.49134**
Pending home sales	0.14487***	-0.8662***	0.03822**	-0.08605*	-0.00309	0.1383	0.04684***	-0.03212	0.05059	-0.0823	-0.08788**	-0.70701***
Personal consumption	-0.02318	0.15519	0.05627***	-0.109*	0.09287***	-0.29668**	-0.00731	0.10063	0.14937**	-0.16345	-0.06411	-0.60997**
Personal income	-0.00477	0.16598	0.16396***	-0.34493***	0.2105***	-0.73824***	0.01295	-0.02388	0.16505***	-0.19673*	-0.09811**	-0.76453***
Producer price index	0.12583***	-0.51275***	0.04942***	-0.01475	0.14451***	-0.47612***	0.02331**	0.02659	0.2776***	-0.25324***	0.07495*	0.29216
Trade balance	0.08875***	-0.24	0.04125***	0.00637	0.02838	0.08788	0.01139	0.03537	0.01691	0.05017	-0.03151	-0.11329
Announcements specific to commodity markets												
Crude Oil Weekly inventory	0.0962***	0.15058									0.9177***	1.06866***
Natural Gas Weekly inventory												
Observations	495652	500857	492438	485244	315201	448530						
R ²	0.15738	0.084362	0.071708	0.064643	0.058782	0.161297						

This table presents estimates of eq. 10 using financialization variable NLS_t . The equation is $\sigma_t^2 = \alpha_0 + \alpha_1 \sigma_{t-1}^2 + \alpha_2 \varepsilon_t^2 + \sum_{m=1}^{22} \Phi_m D_{m,t} + \beta X_{i,t} + \sum_{k=1}^n \phi_k I_{kt} + \sum_{h=1}^{23} \rho_h D_{h,t}$ where $I_{kt} = D_{m,t} \cdot X_{i,t}$ and $D_{m,t}$ is a macro announcement dummy variable for release m . The Φ_m coefficients capture the instantaneous change in the conditional variance when an announcement has just occurred. The ϕ_m coefficients capture the conditional variance when an announcement has just occurred in conjunction with the level of financialization.

Table 22: Announcement (macro & commodity-specific) and financialization (MM-NLS) effects on futures returns (Kurov) - ZLB Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m
Macroeconomic News Announcements												
Initial jobless claims	-0.61873***	3.79363***	0.82122***	-1.83823***	-0.9461***	3.51646***	-0.13481***	0.2624	-0.30845	0.89588*	-0.06368	0.28495
ADP Employment	1.44785***	-7.85026***	-2.63505***	6.5434***	1.65861***	-5.12131***	0.29183**	-0.98879	0.09768	-0.81895	0.66288**	0.35649
CB Consumer	0.23286***	-1.72586***	-0.02786*	0.03013	0.03949*	0.20351	0.03721***	-0.1228	-0.10851*	0.19894*	0.06576**	0.22021
Advance retail sales	0.72061***	-5.2157***	-0.48559***	1.07889***	0.40723***	-1.59806***	0.04838*	-0.51979**	-0.1449	0.22726	0.10462*	0.03384
Building permit	0.00943	-0.03507	-0.01738	-0.04424	0.03626*	-0.02107	-0.00067	-0.01652	0.00852	-0.09906	-0.03031	-0.14419
Construction spending	-0.01686	-0.07735	0.00554	-0.0168	0.03991	-0.13778	0.01419	-0.253***	0.09235	-0.15374	-0.04047	-0.07342
Consumer credit	-0.00935	0.00035	-0.02739**	0.10286**	0.01537	-0.18194***	0.00156	0.05545	0.05113	-0.09891	0.02655	0.14118
Consumer price index	0.00068	-0.148	-0.04091**	0.12628	-0.0445*	0.12259	0.00586	-0.31484***	0.00768	-0.09833	0.03047	0.18925
Durable goods orders	0.20737***	-1.59397***	-0.08826***	0.32878***	0.06089***	-0.45767***	0.02528**	-0.04901	0.0729	-0.06165	0.00919	-0.30145
Existing home sales	0.09446**	-0.43011	-0.07796***	0.23737***	-0.04781	0.30091	0.05891***	-0.13818	-0.05208	0.10284	0.00204	-0.03008
Factory orders	-0.05469	0.45466	-0.05182*	0.10148	0.0753**	0.27928	0.00053	-0.02256	0.02337	-0.07138	0.02626	0.38077
GDP	0.09203**	-0.51635**	-0.1617***	0.24657**	0.25379***	-0.84989***	0.02338*	0.24025**	-0.23846***	0.38337**	0.01852	-0.117
Housing starts	0.10174**	-0.67073**	-0.08595***	0.07723	0.12082***	0.23702	0.02456**	-0.00819	-0.06445	0.10574	-0.01387	-0.26555
Industrial production	0.13054**	-0.83082*	-0.03781	0.08352	-0.05807*	0.16764	0.01605	-0.17091	-0.15723**	0.27747*	0.03047	0.02433
New home sales	0.11875**	-0.61516	-0.16013***	0.41718***	0.08742***	0.26801	0.07452***	-0.01334	-0.13515	0.25862	0.02251	-0.06486
Non-farm employment	8.42886***	-45.72262***	-7.18381***	15.6598***	5.9562***	-24.71473***	1.55073***	-2.37769**	-0.02971	0.41305	0.48504	-11.46876***
Pending home sales	0.23739***	-1.67951***	0.01256	-0.06539	-0.00922	0.078	0.0393***	-0.06399	-0.1564*	0.32581*	-0.00562	-0.42268
Personal consumption	-0.01615	0.35868	-0.06144*	0.19471*	0.02187	-0.1603	0.0097	0.19646	-0.08276	0.13089	-0.02085	-0.11183
Personal income	-0.12451	1.0659	0.07096	-0.31886	-0.21668	1.21137	0.02078	-0.32997	-0.38298	0.75093	-0.29178**	-3.32571***
Producer price index	0.1211***	-0.87303***	-0.05265***	0.13217**	-0.04707*	0.21052	0.01299	-0.11666	0.09948*	-0.16284	-0.03937	-0.19326
Trade balance	-0.02921	0.14179	-0.02691	0.0261	-0.02325	0.10813	-0.01952	0.11285	0.08551	-0.16591	0.02784	0.06101
Announcements specific to commodity markets												
Crude Oil Weekly inventory	-0.14249***	-0.10192										
Natural Gas Weekly inventory												
Observations	495652		500857		492438		485244		315201		448530	
R ²	0.002881		0.003122		0.001578		0.000642		0.000452		0.001913	

This table presents estimates of eq. 6, $R_t^{i+\tau} = \alpha + \sum_{m=1}^{22} \gamma_m S_{m,t} + \delta X_{t,i} + \sum_{m=1}^{22} \theta_m (S_{m,t} \cdot X_t) + \beta R_{t-\tau}^i + \epsilon_t$ using the method proposed by Kurov et al. (2019) and financialization variable $MM_N L S_t$. The γ_m coefficients capture the instantaneous change in return when an announcement has just occurred and especially if that announcement was unanticipated. The coefficients θ_m capture the instantaneous change in return when an announcement has just occurred in conjunction with the level of financialization.

Table 23: Announcement (macro & commodity-specific) and financialization (SWAP-NLS) effects on futures returns (Kurov) - ZLB Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m
Announcements												
Macroeconomic News Announcements												
Initial jobless claims	-0.32056***	-1.72794***	0.38264***	0.42661	-0.40779***	-1.27055	0.13737	-0.87888	0.14847**	0.45145	-0.0701	-0.1039
ADP Employment	0.69846***	3.71649***	-0.85488***	-1.58718	0.853***	0.48351	-0.99839	4.17881*	0.16141	1.79936*	0.90271*	-1.93898
CB Consumer	0.10301***	0.87977***	-0.01011	0.10979	-0.01216	-0.10324	-0.14402*	0.57572**	-0.02866*	-0.14917	0.11438	-0.43482
Advance retail sales	0.24843***	1.51216***	-0.28012***	-0.97235***	0.13895***	-0.56864	-0.63271***	2.12932***	-0.07521**	-0.39294	0.46335***	-2.78721***
Building permit	0.02936	0.18263	-0.02238**	0.03441	0.03317**	0.25235	-0.22253***	0.75451***	-0.03283***	0.00983	0.01802	-0.28407
Construction spending	0.00556	0.30199**	0.01642	0.13233	0.0163	0.12278	-0.29005***	0.96048***	0.03267	0.13762	-0.01452	-0.12698
Consumer credit	-0.00969	-0.01432	0.00832	-0.07044	0.01001	-0.1192	0.02716	-0.07626	0.00857	0.07192	0.04016	-0.17524
Consumer price index	-0.0476***	-0.23974**	0.02015	0.31684	-0.01748	-0.44052*	-0.11054	0.39	-0.03451**	0.05952	0.05187	-0.23282
Durable goods orders	0.11917***	0.59693***	-0.05002***	-0.26004***	0.00327	0.25498*	0.08716**	-0.20937*	0.0913***	0.25771***	0.00296	0.12176
Existing home sales	0.0546***	0.01145	-0.02656	-0.13171	-0.00135	0.15546	-0.07654	0.40998*	-0.01008	-0.08721	0.15042*	-0.85454*
Factory orders	-0.00835	-0.14771	-0.04126*	-0.14039	0.02815*	-0.11486	-0.06044	0.19988	-0.01459	-0.03536	0.07999	-0.5316
GDP	0.06167***	0.3174***	-0.04749**	0.37778***	0.14238***	0.34776*	-0.03946	0.23063	-0.07962***	-0.16292	-0.03689	0.44542
Housing starts	0.09313***	0.48485***	-0.09264***	-0.16993	0.09609***	-0.25287	-0.0246	0.15814	-0.03424**	-0.19375**	-0.01233	0.00095
Industrial production	0.07388***	0.42044**	0.00084	0.14587	0.03551*	0.23188	-0.00288	0.0343	-0.03194	-0.07516	0.07229	-0.2827
New home sales	0.09002***	0.44011***	-0.03834	0.11355	0.04672**	0.06064	0.01671	0.17876	-0.00305	0.01911	0.09846	-0.50693
Non-farm employment	3.88185***	13.80768***	-4.82381***	-15.84916***	2.103***	8.70416**	-0.61228	6.83749***	0.3563	2.6998	0.22581	5.96351
Pending home sales	0.05149***	0.45606***	0.00041	0.05162	0.01186	0.51632*	-0.00387	0.12369	-0.00455	-0.07283	0.08726	-0.27124
Personal consumption	0.03372	-0.02065	0.00836	0.12445	0.00736	0.54898*	0.1011	-0.27521	-0.0175	-0.00691	-0.05347	0.27416
Personal income	-0.05994	-0.50016	-0.02996	-0.1618	0.0143	2.79718**	-0.10297	0.411	-0.05688	-0.65726	-0.46663	3.32969
Producer price index	0.02268*	0.11458	-0.0054	0.08145	-0.01398	0.34543**	-0.0017	0.03633	0.01875	-0.08175	-0.06659	0.3003
Trade balance	-0.02017	-0.09883	-0.00403	0.14655	-0.00768	-0.21584	-0.06485	0.18213	0.01558	0.10698	0.01481	0.04146
Announcements specific to commodity markets												
Crude Oil Weekly inventory	-0.25063***	-0.60613***									-1.20271***	3.39611***
Natural Gas Weekly inventory												
Observations	495652	0.002955	500857	0.002525	492438	0.001046	485244	0.000681	315201	0.000478	448530	0.002085
R ²												

This table presents estimates of eq. 6, $R_t^{t+\tau} = \alpha + \sum_{m=1}^{22} \gamma_m S_{m,t} + \delta X_{t,i} + \sum_{m=1}^{22} \theta_m (S_{m,t} \cdot X_t) + \beta R_{t-\tau}^t + \epsilon_t$ using the method proposed by Kurov et al. (2019) and financialization variable $SWAP_{NLS,t}$. The γ_m coefficients capture the instantaneous change in return when an announcement has just occurred and especially if that announcement was unanticipated. The coefficients θ_m capture the instantaneous change in return when an announcement has just occurred in conjunction with the level of financialization.

Table 24: Announcement (macro & commodity-specific) and financialization (MM-NLS) effects on futures conditional variance - ZLB Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m
Macroeconomic News Announcements												
Initial jobless claims	0.11042***	-0.51631***	0.05263***	-0.00595	0.08731***	-0.12781**	0.03485***	-0.06463*	0.17234***	-0.20324***	-0.02869***	-0.13137
ADP Employment	0.06053**	-0.52779**	0.07769***	-0.17422***	0.06459***	-0.31473***	0.03757***	-0.03711	0.00838	0.00886	0.01206	-0.00492
CB Consumer	0.20124***	-1.3458***	0.05019***	-0.06305	0.05986***	0.02708	0.05096***	-0.132*	0.09902**	-0.14213	-0.00238	-0.01103
Advance retail sales	0.20892***	-1.16165***	0.12186***	-0.22994***	0.12102***	-0.28523**	0.06519***	-0.25509***	0.06152	-4e-05	-0.00614	-0.23023
Building permit	0.10335***	-0.6773**	0.08754***	-0.16183***	0.10387***	-0.38658***	0.0323***	-0.08438	0.05805	5e-04	-0.01453	-0.22983
Construction spending	0.30662***	-2.0092***	0.10043***	-0.17977***	0.09162***	-0.24762**	0.07129***	-0.15578**	0.03585	0.0262	0.01936	-0.11956
Consumer credit	0.06781**	-0.45377*	0.01954	-0.04524	0.02045	-0.00112	0.00041	0.13979**	-0.07108	0.14854	0.00592	0.03352
Consumer price index	0.03264	-0.30328	0.10382***	-0.19722***	0.09979***	-0.21962	0.01185	-0.02195	0.02337	0.03283	-0.02505	-0.27462
Durable goods orders	0.16495***	-0.98185***	0.05274***	-0.02911	0.03975**	0.19593	0.03304***	-0.11622	0.11101**	-0.0775	0.02164	0.07533
Existing home sales	0.06024**	-0.37169	0.06853***	-0.09569**	0.07145***	-0.09328	0.03615***	-0.1979***	0.02413	-0.0428	0.03945*	0.08293
Factory orders	0.08018***	-0.53355**	0.00713	0.07431	-0.00389	0.18423	0.02073**	0.01816	0.10843**	-0.18796*	0.00491	-0.51457***
GDP	0.19148***	-1.31834***	0.08641***	-0.09203*	0.13275***	-0.23199*	0.05266***	-0.04615	0.24948***	-0.39107***	-0.04221*	-0.10882
Housing starts	0.07005**	-0.38038	0.05814***	-0.07651	0.07579***	-0.22709*	0.03668***	-0.11181	0.04081	0.0384	-0.01655	-0.17388
Industrial production	0.07962**	-0.78674***	0.01453	0.01179	0.04212**	-0.22839*	0.00789	-0.0558	0.07086	-0.18734*	-0.04399**	-0.34835**
New home sales	0.13***	-0.72125***	0.05974***	-0.01109	0.06094***	-0.00298	0.04619***	-0.06623	0.27489***	-0.48294***	-0.00206	-0.15513
Non-farm employment	0.41187***	-1.49559***	0.38777***	-0.47071***	0.46246***	-0.70966***	0.1787***	0.07823	0.13212***	0.09361	0.07222***	-0.36383**
Pending home sales	0.16519***	-1.17845***	0.02729**	-0.0649	-0.00125	0.17222	0.0491***	-0.05658	0.04843	-0.08794	-0.02888	-0.72767***
Personal consumption	0.00594	-0.09037	0.06558***	-0.17108***	0.07976***	-0.31621**	-0.01151	0.07871	0.16883***	-0.22576*	0.01929	-0.26873
Personal income	0.0335	-0.15354	0.15047***	-0.37937***	0.17321***	-0.73187***	0.01627*	-0.11945	0.17525***	-0.2426**	-0.00037	-0.36836**
Producer price index	0.17157***	-1.00764***	0.07182***	-0.10851**	0.12842***	-0.53013***	0.0216**	0.04167	0.28218***	-0.29799***	0.03465	0.10017
Trade balance	0.11056***	-0.48706**	0.06293***	-0.08213*	0.038**	0.04965	0.01111	-0.02654	0.02059	0.04861	-0.02653	-0.17166
Announcements specific to commodity markets												
Crude Oil Weekly inventory	0.10301***	0.10001									0.80936***	0.99041***
Natural Gas Weekly inventory											448530	
Observations	495652	0.16859	500857	492438	485244	0.072993	315201	0.05873				
R ²			0.085873	0.071917								0.162315

This table presents estimates of eq. 10 using financialization variable $MM_N L S_t$. The equation is $\sigma_t^2 = \alpha_0 + \alpha_1 \sigma_{t-1}^2 + \alpha_2 \epsilon_t^2 + \sum_{m=1}^{22} \Phi_m D_{m,t} + \beta X_{i,t} + \sum_{k=1}^n \phi_k I_{kt} + \sum_{h=1}^{23} \rho_h D_{h,t}$ where $I_{kt} = D_{m,t} \cdot X_{i,t}$ and $D_{m,t}$ is a macro announcement dummy variable for release m . The Φ_m coefficients capture the instantaneous change in the conditional variance when an announcement has just occurred. The ϕ_m coefficients capture the conditional variance when an announcement has just occurred in conjunction with the level of financialization.

Table 25: Announcement (macro & commodity-specific) and financialization (SWAP-NLS) effects on futures conditional variance - ZLB Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m
Macroeconomic News Announcements												
Initial jobless claims	0.06549***	0.23925***	0.03655***	-0.12678***	0.06619***	0.167**	-0.08182***	0.37478***	0.09328***	0.229***	0.00441	-0.14759
ADP Employment	0.01409	0.23268***	0.05449***	0.17291**	0.01648	0.17252	-0.09995**	0.43807***	0.00677	-0.08376	0.0172	-0.03058
CB Consumer	0.07658***	0.4458***	0.0511***	0.14388*	0.06286***	0.03792	-0.11184**	0.53857***	0.03987***	0.1067	0.01192	-0.0844
Advance retail sales	0.10253***	0.4136***	0.06959***	0.03131	0.07934***	0.12412	-0.16067***	0.71939***	0.06466***	0.05069	0.00636	0.0367
Building permit	0.04852***	0.34467***	0.05713***	0.07698	0.04958***	0.14126	-0.16538***	0.65673***	0.05851***	0.00501	-0.01757	0.12566
Construction spending	0.11014***	0.54991***	0.09045***	0.30367***	0.04787***	0.38803***	-0.17841***	0.78982***	0.0554***	0.1119	0.16948***	-0.89328***
Consumer credit	0.02295**	0.10146	0.02228**	0.118	0.02205**	-0.07699	0.09392*	-0.2947*	-0.01962	-0.24147*	0.0139	-0.06912
Consumer price index	0.00803	0.17941	0.06524***	0.10223	0.0807***	0.35766*	-0.05375	0.21154	0.03108*	-0.11694	0.01028	-0.08624
Durable goods orders	0.07999***	0.42086***	0.03571***	-0.08651	0.06175***	0.14099	-0.00805	0.12492	0.08454***	0.14655	0.0136	0.01322
Existing home sales	0.01941*	0.00449	0.06046***	0.13692*	0.0595***	-0.05527	-0.09607**	0.42236***	0.00571	0.02091	0.09926**	-0.42834
Factory orders	0.03087***	0.21435**	0.03428***	0.06602	0.0256**	-0.14294	-0.11869***	0.45413***	0.04081***	0.31705***	-0.04324	0.5969**
GDP	0.06672**	0.47858***	0.04323**	-0.16305*	0.09343***	-0.38106***	-0.00081	0.16193	0.09609***	0.4349***	-0.02224	-0.0661
Housing starts	0.0434***	0.28794***	0.0351***	-0.03896	0.04387***	0.05641	-0.12478***	0.53005**	0.05811***	-0.00276	-0.03612	0.21804
Industrial production	0.01151	0.33085***	0.02356**	0.05644	0.00956	0.08248	0.02927	-0.07343	-0.00602	0.11675	0.00339	-0.13793
New home sales	0.06516***	0.30707***	0.09172***	0.30519***	0.05405***	-0.28987**	0.00163	0.14223	0.08315***	0.44694***	0.00018	0.06456
Non-farm employment	0.28112***	0.64937***	0.27301***	0.02822	0.32165***	-2.05556***	0.10034**	0.25963**	0.20289***	0.43864***	0.13651***	-0.2385
Pending home sales	0.05843***	0.46806***	0.03808**	0.22974***	0.02312**	0.01365	-0.15574***	0.65543***	0.01164	0.0586	0.0324	-0.01779
Personal consumption	-0.00771	-0.05499	0.06986***	0.4015***	0.02991**	-0.30442*	0.02375	-0.11179	0.08672***	0.33367***	-0.0348	0.49927*
Personal income	0.01155	-0.0877	0.15783***	0.89515***	0.05059***	0.66424***	0.09887*	-0.27659*	0.07954***	0.29818**	-0.09135*	0.7902***
Producer price index	0.07622***	0.29168***	0.05587***	0.10034	0.04884***	0.2141	-0.02427	0.15638	0.16635***	0.31874***	0.12565***	-0.65777**
Trade balance	0.06486***	0.08942	0.00256	-0.36379***	0.05518***	0.56239***	-0.01684	0.0922	0.04085***	-0.03389	-0.02124	0.04951
Announcements specific to commodity markets												
Crude Oil Weekly inventory	0.27209***	1.11802***									0.91556***	-1.06191***
Natural Gas Weekly inventory											448530	
Observations	495652	500857	492438	485244	315201	0.06056	0.15983					
R ²	0.164857	0.084522	0.08036	0.081774								

This table presents estimates of eq. 10 using financialization variable $SWAP_NLS_t$. The equation is $\sigma_t^2 = \alpha_0 + \alpha_1 \sigma_{t-1}^2 + \alpha_2 \varepsilon_t^2 + \sum_{m=1}^{22} \Phi_m D_{m,t} + \beta X_{i,t} + \sum_{k=1}^n \phi_k I_{kt} + \sum_{h=1}^{23} \rho_h D_h$ where $I_{kt} = D_{m,t} \cdot X_{i,t}$ and $D_{m,t}$ is a macro announcement dummy variable for release m . The Φ_m coefficients capture the instantaneous change in the conditional variance when an announcement has just occurred. The ϕ_m coefficients capture the conditional variance when an announcement has just occurred in conjunction with the level of financialization.

8 Figures

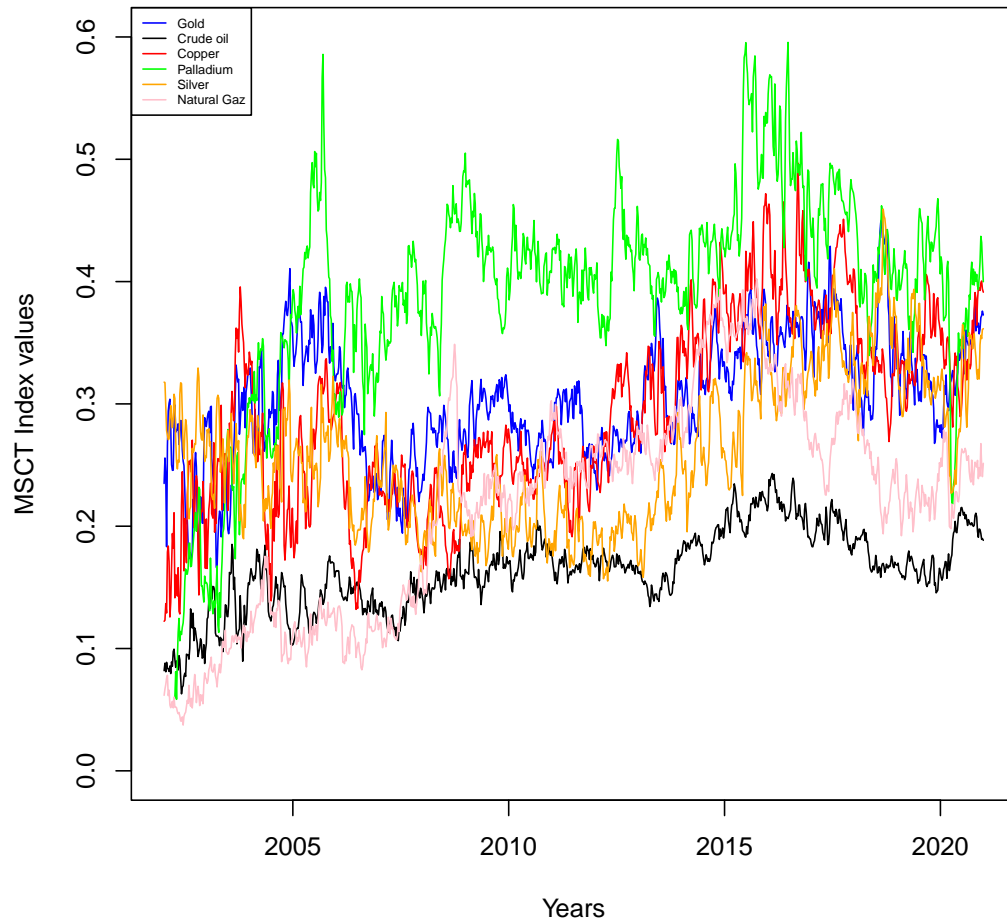


Figure 1: Time series showing the evolution of the Market Share of Non-Commercials (MSCT) index for all commodities in our sample, 4/2007–12/2020.

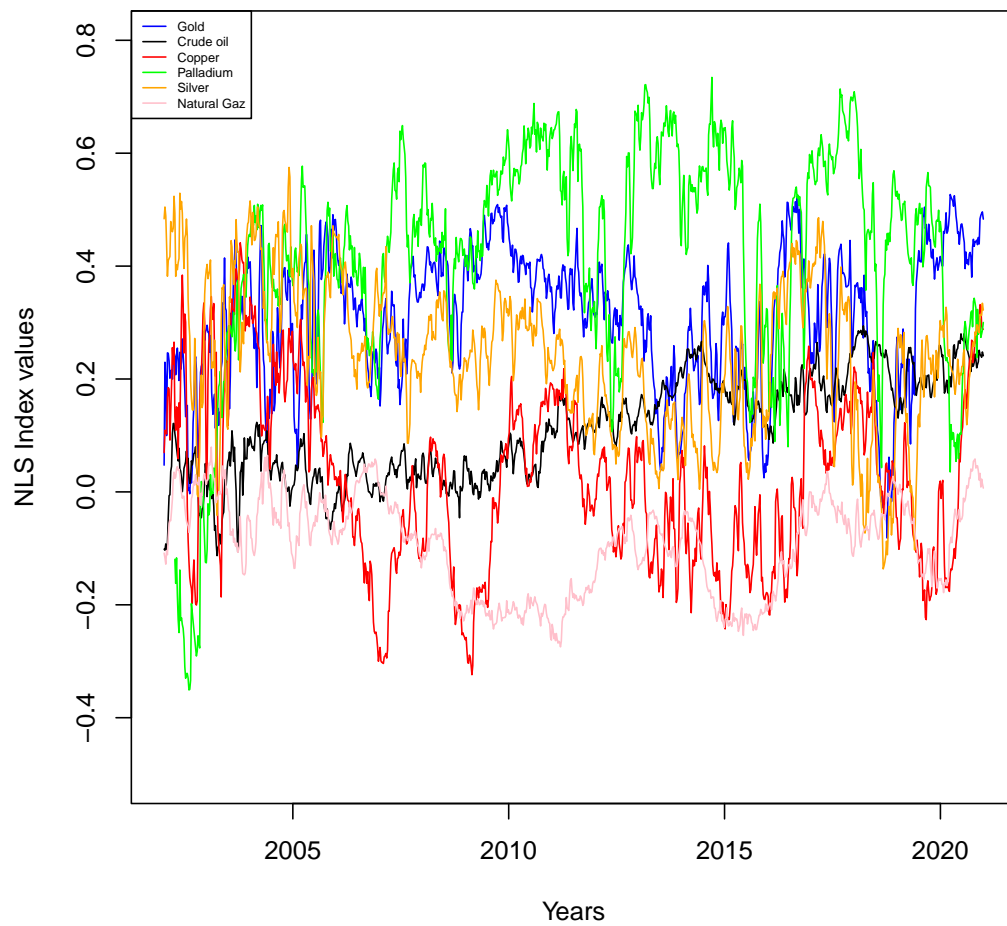


Figure 2: Time series showing the evolution of the Net Long Short (NLS) index for all commodities in our sample, 4/2007–12/2020.

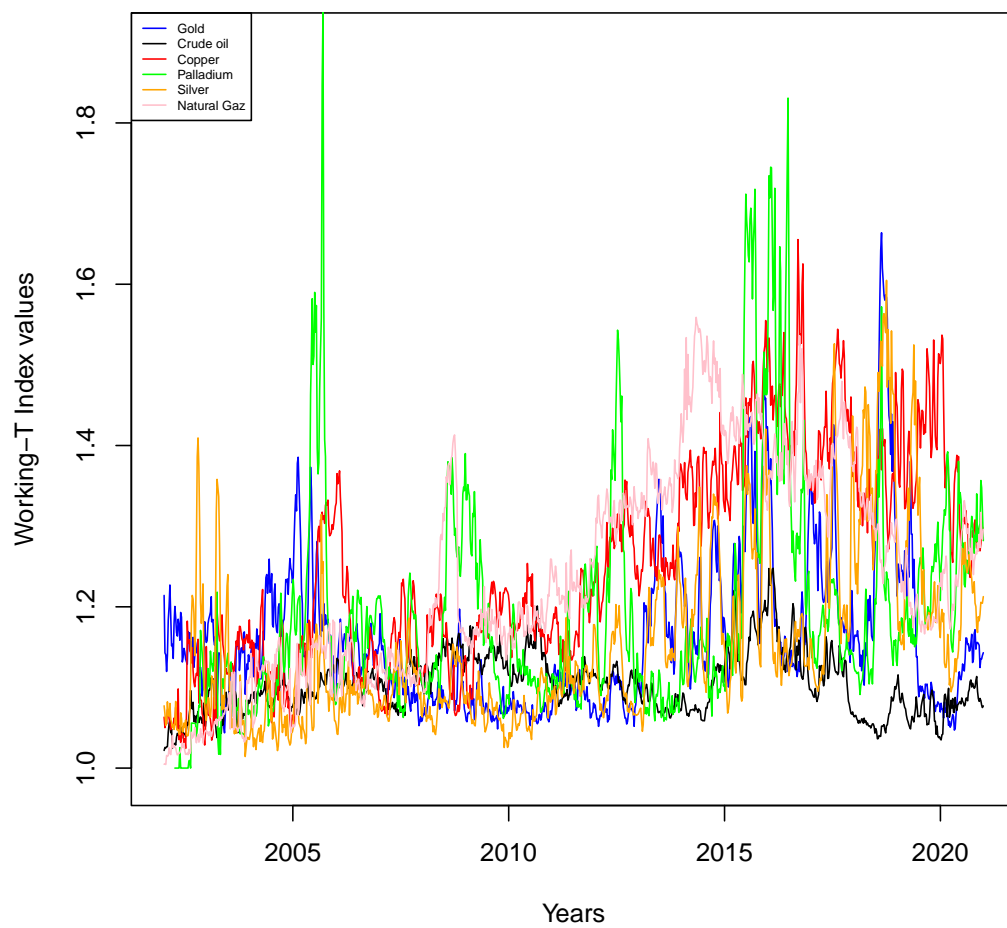


Figure 3: Time series showing the evolution of the Working's T index for all commodities in our sample, 4/2007–12/2020.

Table 26: Announcement (macro & commodity-specific) and financialization (MSCT) effects on futures returns (Kurov) - Full Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m
Macroeconomic News Announcements												
Initial jobless claims	-0.17269	0.81785	0.35354***	-1.16184***	-0.597***	2.60183***	-0.16447**	0.52026**	-0.04601	0.16735	0.05394	-0.22429
ADP Employment	0.4279**	-1.75229*	0.17464	-0.61362	0.99692***	-3.82781***	0.73075***	-2.26978***	0.54531**	-1.51275**	-0.31535	1.33729
CB Consumer	0.07308	-0.18786	-0.09105**	0.38458***	0.08368**	-0.44916***	0.10301**	-0.30698**	-0.01444	-0.01458	0.02629	0.0173
Advance retail sales	0.05386	-0.08326	-0.32683***	0.84558***	-0.16195**	0.50343**	0.14357**	-0.42131**	0.21525**	-0.63829***	0.11071	-0.46188
Building permit	0.09826*	-0.60141**	0.04186	-0.1613	0.02706	-0.18814	0.01576	-0.02451	0.02636	-0.09451	0.10885	-0.37952
Construction spending	0.20815**	-1.18447**	-0.01436	0.01476	0.09145**	-0.36507**	-0.00913	0.02605	-0.16893*	0.41388*	-0.05998	0.18388
Consumer credit	-0.07876	0.44776	-0.00196	-0.00444	0.06263**	-0.21898***	0.04169	-0.11137	-0.02386	0.07046	-0.06683	0.26239
Consumer price index	-0.24338***	1.22982***	-0.38533***	1.3611***	0.32734***	-1.56094***	0.07949*	-0.34742***	-0.40191***	0.81992***	-0.07215	0.26193
Durable goods orders	0.16941***	-0.94154**	-0.1604***	0.5802***	0.20947***	-0.89069***	0.22329***	-0.64938***	0.07477	-0.12421	0.06429	-0.18845
Existing home sales	0.0335	-0.09627	0.0082	-0.04173	0.04969	-0.18234	0.10458***	-0.26099***	0.0618	-0.16229	0.15671*	-0.56062*
Factory orders	0.01132	-0.07277	0.0475	-0.23893*	0.01524	-0.17347	-0.04658	0.17274	0.00563	-0.05741	-0.0032	0.08764
GDP	0.00103	0.06139	-0.05741	-0.06542	-0.19739***	0.34948**	0.21569***	-0.61681***	-0.09391	0.10342	0.08718	-0.31827
Housing starts	-0.05549	0.36742	-0.07544*	0.14313	-0.15101***	0.35461***	0.0625	-0.16238	-0.27195***	0.59943***	0.07248	-0.31492
Industrial production	-0.05679	0.2785	-0.02818	0.00664	-0.06103	0.07782	0.03786	-0.14009	-0.01019	-0.00621	0.02256	-0.17454
New home sales	0.00174	0.0692	-0.00999	-0.04336	-0.08205	0.12993	0.22676***	-0.59818***	0.03259	-0.07494	-0.08409	0.32422
Non-farm employment	1.34991***	-6.24169***	-0.88205***	2.74985***	0.71245***	-2.86793***	1.10871***	-3.4861***	1.6227***	-4.50881***	-0.53455	2.41127
Pending home sales	0.10027	-0.47927	0.02889	-0.14231	0.04517	-0.23134	0.01093	0.00559	0.13586	-0.32594	0.0258	0.01288
Personal consumption	-0.11005	0.60873	-0.16737***	0.5439***	0.02927	-0.10331	0.02524	-0.07862	0.0782	-0.21825	0.05713	-0.33516
Personal income	0.19418	-1.11513	-0.26757*	0.83348*	0.08318	-0.33622	-0.22522*	0.70561*	-0.05962	0.13436	0.1536	-0.62287
Producer price index	0.08705	-0.4889	-0.07624**	0.3112***	0.06089*	-0.3317**	0.03516	-0.12496	0.13857**	-0.35739**	-0.03556	0.06394
Trade balance	0.11354*	-0.76201*	0.0375	-0.13638	-0.01022	0.05537	0.00892	-0.0516	-0.07984	0.19137	-0.01249	0.10325
Announcements specific to commodity markets												
Crude Oil Weekly inventory	-0.02105	-0.75799***									0.09661	-1.73275***
Natural Gas Weekly inventory												
Observations	1193455	0.001836	1190001	1180816	1180816	1138696	1138696	749168	1101836			
R ²			0.001414	0.001048	0.001048	0.000379	0.000379	0.000266	0.001196			

This table presents estimates of eq. 6, $R_t^{t+\tau} = \alpha + \sum_{m=1}^{22} \gamma_m S_{m,t} + \delta X_{t,i} + \sum_{m=1}^{22} \theta_m (S_{m,t} \cdot X_t) + \beta R_{t-\tau}^t + \epsilon_t$ using the method proposed by Kurov et al. (2019) and financialization variable $MSCI_t$. The γ_m coefficients capture the instantaneous change in return when an announcement has just occurred and especially if that announcement was unanticipated. The coefficients θ_m capture the instantaneous change in return when an announcement has just occurred in conjunction with the level of financialization.

Table 27: Announcement (macro & commodity-specific) and financialization (WT) effects on futures returns (Kurov) - Full Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m
Macroeconomic News Announcements												
Initial jobless claims	-2.72317***	2.54402***	1.95068***	-1.85382***	-2.73165***	2.48198***	-0.51585***	0.39918**	0.41845**	-0.35212**	0.26294	-0.21395
ADP Employment	0.42334	-0.31925	-1.87022***	1.70565***	3.16957***	-2.80197***	1.40773***	-0.99856***	-0.34768	0.25256	-0.30605	0.23151
CB Consumer	-0.51008	0.50063	-0.11058**	0.12443***	0.33198***	-0.31746***	0.248***	-0.18412***	0.09918	-0.09728	-0.0141	0.03475
Advance retail sales	2.61014***	-2.44694***	0.1169	-0.13731	0.10808	-0.10441	0.71952***	-0.54159***	-0.22639	0.15872	0.29694	-0.2362
Building permit	-0.26396	0.24817	0.04458	-0.0487	0.14859*	-0.14616**	-0.00195	0.00648	-0.04085	0.01909	0.24231	-0.17974
Construction spending	0.51461	-0.47216	0.09324	-0.08744*	0.24955**	-0.21877***	0.05299	-0.0402	-0.20469**	0.17555**	-0.10808	0.07458
Consumer credit	-0.10509	0.09496	0.01988	-0.01963	0.12335**	-0.10397***	0.05805	-0.04096	-0.1005	0.08898	-0.09181	0.07137
Consumer price index	0.12419	-0.14639	-0.75336***	0.69558***	1.74249***	-1.56473***	0.42986***	-0.35482***	-0.115683*	0.08383	-0.33289*	0.25382*
Durable goods orders	0.66055***	-0.6145***	-0.2421***	0.22889***	0.48551***	-0.43654***	0.35842***	-0.26175***	0.13976*	-0.10394*	0.24398*	-0.17469
Existing home sales	0.81342***	-0.73895***	0.02932	-0.02948	0.12157	-0.10252	0.2302***	-0.15948**	0.04782	-0.04563	0.2283	-0.17186
Factory orders	-0.07882	0.0723	0.043	-0.06182	0.08843	-0.10148	-0.11794	0.09612	-0.0023	-0.01385	-0.15365	0.13642
GDP	-0.29895	0.28467	-0.13702*	0.18425***	-0.02867	-0.06026	0.42527***	-0.31542***	0.04028	-0.07835	0.18286	-0.13845
Housing starts	-0.31531	0.29813	0.00216	-0.0239	-0.0774	0.02949	0.15035**	-0.10519**	-0.13741*	0.10154*	0.12223	-0.10169
Industrial production	-0.5416	0.49076	-0.09771	0.06132	-0.20799*	0.14116	0.09847	-0.08164	0.0231	-0.03144	0.09067	-0.08929
New home sales	-0.51511	0.48718	-0.11535*	0.11647**	-0.14097	0.08081	0.40194***	-0.28602***	0.10254	-0.08375	-0.21011	0.16145
Non-farm employment	-0.64716	0.64998	-3.93856***	3.59324***	2.96334***	-2.64398***	1.79631***	-1.28066***	0.47681	-0.33898	-0.4552	0.36905
Pending home sales	-0.49865	0.46766	0.04389	-0.05302	0.10203	-0.10227	-0.02135	0.02569	0.19396	-0.1596	0.10408	-0.05986
Personal consumption	-0.0791	0.07278	-0.12236**	0.1171**	0.01867	-0.01621	0.02184	-0.01697	-0.24043**	0.19378**	0.00376	-0.02339
Personal income	0.11852	-0.1312	-0.60773***	0.55793***	0.75563**	-0.67091**	-0.64049**	0.46742**	0.0692	-0.06482	1.14311*	-0.91757*
Producer price index	-0.22354	0.2074	-0.19504***	0.1896***	0.16443*	-0.16207**	0.16863*	-0.1319*	0.11889	-0.10135	0.0306	-0.03836
Trade balance	0.30554	-0.27147	-0.1287**	0.12051**	0.05369	-0.04912	0.02587	-0.02434	-0.01768	0.01505	-0.06141	0.06019
Announcements specific to commodity markets												
Crude Oil Weekly inventory	-0.11062	-0.03484										
Natural Gas Weekly inventory											0.31404***	-0.52644***
Observations	1193455		1190001		1180816		1138696		749168		1101836	
R ²	0.001788		0.00183		0.001339		0.000396		0.00022		0.001204	

This table presents estimates of eq. 6, $R_t^{t+\tau} = \alpha + \sum_{m=1}^{22} \gamma_m S_{m,t} + \delta X_{t,j} + \sum_{m=1}^{22} \theta_m (S_{m,t} \cdot X_t) + \beta R_{t-\tau}^t + \epsilon_t$ using the method proposed by [Kurov et al. \(2019\)](#) and financialization variable WT_t . The γ_m coefficients capture the instantaneous change in return when an announcement has just occurred and especially if that announcement was unanticipated. The coefficients θ_m capture the instantaneous change in return when an announcement has just occurred in conjunction with the level of financialization.

Table 28: Announcement (macro & commodity-specific) and financialization (PCA) effects on futures returns (Kurov) - Full Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m
Macroeconomic News Announcements												
Initial jobless claims	-0.03678***	0.03459	0.17292***	-2.3094***	0.18376***	-2.01994***	0.00293	-1.36178***	-1e-05	-0.07918	-0.00556	-0.01098
ADP Employment	0.14017***	-0.0595*	-0.07777***	0.15403***	-0.10969***	0.22191***	0.06766***	0.03644**	-0.00127	0.00059	0.0838	0.10394
CB Consumer	0.04236***	-0.01208	-0.03419***	0.13402***	-0.04358***	-0.25341***	0.00643	-0.1673***	-0.01969*	-0.01538	0.03057**	0.00144
Advance retail sales	0.04375***	-0.0088	-0.0395***	0.01267***	-0.01565	-0.02849***	0.00998	-0.01919***	-0.02026**	-0.01189	-0.00374	-0.00494
Building permit	0.00298	0.01757*	-0.01135**	-0.00218	-0.02413***	0.00056	0.00728	-0.03935***	-0.01645**	-0.01596	0.01235	-0.02035*
Construction spending	0.00809	-0.03581**	-0.00832	-0.00536	-0.00981	-0.01372**	-0.00062	-5e-04	0.00913	0.00036	-0.01243	0.01026
Consumer credit	-0.00322	0.01332	-0.00289	-0.00601	7e-04	-0.02031***	0.00559	0.00016	0.00679	0.02454**	0.00143	0.01181
Consumer price index	0.03543***	-0.03692***	-0.05483***	-0.00176	-0.10937***	-0.01011***	-0.03288***	-0.00609	-0.05374***	0.00838	-0.0047	0.01551
Durable goods orders	0.01368***	-0.03864***	-0.02515***	0.05928***	-0.03261***	-0.13181***	0.01623***	-0.02752***	0.01345*	0.014	0.01582	-0.0087
Existing home sales	0.02008	-0.01516	-0.00522	-0.02186***	-0.00013	-0.04068***	0.02136***	-0.03333***	-0.00779	-0.01774*	0.01211	-0.02662*
Factory orders	-0.00062	0.00292	-0.02925***	-0.0037	-0.03248***	-0.00998	0.00852	-0.01503***	-0.01913	-0.00578	0.01888	-0.00238
GDP	0.01182	-0.00052	-0.07755***	-0.00734	-0.09985***	-0.01094	0.01673**	0.00996	-0.0546***	-0.00249	0.00176	-0.00805
Housing starts	0.0065	0.00892	-0.02528***	0.01492**	-0.04326***	-0.00336	0.0123*	-0.03623***	-0.01777**	-0.00571	-0.00875	-0.0161
Industrial production	-0.00929	0.00483	-0.02642***	-0.00286	-0.0404***	0.00425	-0.00738	-0.01099*	-0.01467	0.02633***	-0.02329	-0.00628
New home sales	0.01563	-0.00546	-0.01969***	0.00467	-0.04503***	-0.00625	0.03276***	0.0022	4e-05	0.00181	0.00065	0.01469
Non-farm employment	0.25893***	-0.1586***	-0.19512***	0.01115**	-0.14487***	0.00684	0.08789***	-0.03551***	0.03755***	-0.01164	0.11722*	0.11886*
Pending home sales	0.02108*	-0.02003	-0.01773***	0.36735***	-0.01907*	-0.30985***	0.01269*	-0.2521***	-0.00489	-0.14344***	0.02989	0.01237
Personal consumption	-0.00695	0.01624	-0.01415***	-0.00473	-0.00024	-0.0081	4e-04	0.0019	-0.00336	-0.02761*	-0.0303*	-0.01222
Personal income	0.00392	-0.03088	-0.03459***	0.01316***	-0.02589*	-0.00167	-0.01428*	-0.00442	-0.00842	0.00877	-0.00307	-0.01861
Producer price index	0.00342	-0.01723	-0.02587***	0.04961***	0.02779***	-0.04959*	-0.00437	0.05207**	-0.00873	0.01626	-0.0194	0.00436
Trade balance	-0.01634*	0.01997**	-0.01255*	0.01738***	-0.00187	-0.01307*	-0.00699	-0.0099	-0.00033	-0.02848***	0.01383	0.01053
Announcements specific to commodity markets												
Crude Oil Weekly inventory	-0.148***	-0.02413***										
Natural Gas Weekly inventory											-0.00805	0.00195
Observations	1193455	1190001	1190001	1180816	1138696	749168	1101836					
R ²	0.001845	0.001809	0.001278	0.000449	0.000228	0.000483						

This table presents estimates of eq. 6, $R_t^{t+\tau} = \alpha + \sum_{m=1}^{22} \gamma_m S_{m,t} + \delta X_{t,i} + \sum_{m=1}^{22} \theta_m (S_{m,t} \cdot X_t) + \beta R_{t-\tau}^t + \epsilon_t$ using the method proposed by Kurov et al. (2019) and financialization variable PCA_t . The γ_m coefficients capture the instantaneous change in return when an announcement has just occurred and especially if that announcement was unanticipated. The coefficients θ_m capture the instantaneous change in return when an announcement has just occurred in conjunction with the level of financialization.

Table 29: Announcement (macro & commodity-specific) and financialization (MSCT) effects on futures conditional variance - Full Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m
Macroeconomic News Announcements												
Initial jobless claims	0.05925*	-0.15137	0.10896**	-0.1668**	0.09455***	-0.05388	0.10238***	-0.23646***	0.08883**	-0.0227	0.08759***	-0.35915***
ADP Employment	-0.04522	0.23501	1e-05	0.1115	0.00192	0.16495	0.10563***	-0.23408***	-0.18627**	0.38112*	0.09939	-0.33362
CB Consumer	0.11565	-0.44436	0.037	-0.00272	0.11009***	-0.20939**	0.16917***	-0.4302***	0.11164	-0.19555	0.04412	-0.18347
Advance retail sales	-0.06522	0.60081	0.10903***	-0.57308***	-0.0059	0.42894***	0.12213***	-0.28663***	-0.11342	0.40553**	0.18427***	-0.58649**
Building permit	0.13647**	-0.6803*	0.15975***	-0.40363***	0.13257***	-0.37946***	0.09318***	-0.26484***	0.06884	-0.02091	0.09663	-0.2679
Construction spending	0.17169**	-0.6718	0.06784*	-0.03464	0.08161***	-0.04999	0.23574***	-0.59357***	0.06108	-0.0232	0.06011	-0.14725
Consumer credit	0.02806	-0.12063	0.00195	0.017	0.00768	0.03847	0.03244	-0.08667	0.0302	-0.05883	-0.01208	0.04883
Consumer price index	0.505***	-2.58419***	0.22236***	-1.03864***	-0.18351***	1.25727***	-0.03708	0.42019***	0.4052***	-0.73505***	0.15262*	-0.49541
Durable goods orders	0.05156	-0.1188	0.07628***	-0.14679*	0.05991**	-0.0485	0.08978***	-0.25025***	-0.03253	0.21023	0.0481	-0.14869
Existing home sales	0.09818	-0.35134	0.08388***	-0.15792*	0.11222***	-0.28496***	0.14518***	-0.3764***	0.51154***	-1.1596***	0.13083**	-0.35498
Factory orders	-0.09301	0.76921*	6e-05	0.14911**	0.0174	0.11481	0.1282***	-0.31586***	0.04772	-0.04955	-0.01208	0.24407
GDP	-0.0099	0.17292	0.10772***	-0.13234	0.17949***	-0.33478***	0.10718***	-0.25421***	0.15523	-0.20066	0.01826	-0.11232
Housing starts	0.11427	-0.5905	0.11941***	-0.28247***	0.09153***	-0.23646**	0.09612***	-0.26577***	0.11155	-0.15951	0.06725	-0.19907
Industrial production	0.12609*	-0.74582*	0.11232***	-0.281***	0.05302*	-0.11705	0.07437**	-0.21906**	0.04234	-0.10858	0.10674	-0.44216*
New home sales	0.01205	0.027	0.10477***	-0.1805**	0.15113***	-0.31343***	0.15373***	-0.39662***	-0.01773	0.11541	0.06611	-0.23478
Non-farm employment	0.12564**	0.33361	0.15492***	0.30003***	0.33147***	0.08	0.32639***	-0.61599***	0.08488	0.17016	0.23229***	-0.62294***
Pending home sales	-0.023	0.30789	0.06577**	-0.15417*	0.08007***	-0.17627*	0.18716***	-0.47817***	0.1228	-0.21443	0.27636***	-0.93667***
Personal consumption	-0.00889	0.10034	0.01476	0.06256	-0.00567	0.19038	0.10021***	-0.29489***	0.18689**	-0.29472	0.11014	-0.13738
Personal income	0.0089	0.0197	0.09365***	-0.1596*	0.06349**	-0.02569	0.04245	-0.09077	0.16881*	-0.2676	0.08754	-0.12162
Producer price index	0.03537	0.05367	0.06354**	-0.05404	0.05567*	0.05309	0.06971**	-0.18087*	0.0547	0.10281	0.05762	-0.18468
Trade balance	-0.03747	0.55194	-0.0377	0.30357***	-0.01079	0.32545***	-0.02921	0.12079	-0.13435	0.49068**	0.0182	-0.04505
Announcements specific to commodity markets												
Crude Oil Weekly inventory	-0.12532**	1.35013***									0.65248***	-0.17546
Natural Gas Weekly inventory												
Observations	1193455	0.070041	1190001	0.082937	1180816	0.085948	1138696	0.079205	749168	0.060702	1101836	0.137585
R ²												

This table presents estimates of eq. 10 using financialization variable $MSCT_t$. The equation is $\sigma_t^2 = \alpha_0 + \alpha_1 \sigma_{t-1}^2 + \alpha_2 \epsilon_t^2 + \sum_{m=1}^{22} \Phi_m D_{m,t} + \beta X_{i,t} + \sum_{k=1}^n \phi_k I_{kt} + \sum_{h=1}^{23} \rho_h D_{h,t}$ where $I_{kt} = D_{m,t} \cdot X_{i,t}$ and $D_{m,t}$ is a macro announcement dummy variable for release m . The Φ_m coefficients capture the instantaneous change in the conditional variance when an announcement has just occurred. The ϕ_m coefficients capture the conditional variance when an announcement has just occurred in conjunction with the level of financialization.

Table 30: Announcement (macro & commodity-specific) and financialization (WT) effects on futures conditional variance - Full Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m
Macroeconomic News Announcements												
Initial jobless claims	0.68002***	-0.64614***	0.15281***	-0.08378***	0.02652	0.04416	0.27579***	-0.19031***	-0.17239***	0.20423***	0.27005***	-0.2139***
ADP Employment	-0.47019	0.4223	-0.01923	0.0472	-0.00903	0.04749	0.34757***	-0.24204***	-0.0207	-0.00301	0.20498	-0.14969
CB Consumer	-0.37554	0.37516	0.07012*	-0.02924	0.22177***	-0.14299**	0.42446***	-0.30064***	-0.07754	0.08641	0.07277	-0.05972
Advance retail sales	1.70204***	-1.5762***	-0.05751	0.11507***	-0.09332	0.17281***	0.37105***	-0.26007***	0.02908	0.0227	0.3623**	-0.25696**
Building permit	0.61283**	-0.57485**	0.16763***	-0.11916***	0.15161**	-0.10565*	0.26454***	-0.19526***	-0.07725	0.11015	0.36884**	-0.26393**
Construction spending	0.64259**	-0.63159**	0.01139	0.03805	0.06963	-0.00237	0.56592***	-0.39937***	0.04072	0.00722	0.31258**	-0.22487*
Consumer credit	0.48878*	-0.44884*	0.01283	-0.00477	0.03158	-0.01134	0.1183*	-0.08681	0.01177	-0.00621	0.31323	0.00332
Consumer price index	1.10977***	-0.94981***	-0.32847***	0.37753***	-0.89008***	0.88131***	-0.01885	0.08901	0.03522	0.10183	0.31497*	-0.2268
Durable goods orders	0.68382**	-0.64996**	0.12086***	-0.07851**	0.11583	-0.05799	0.25023***	-0.18356***	-0.08785	0.11699	0.16045	-0.11669
Existing home sales	0.05573	-0.01683	0.15381***	-0.10313***	0.21457***	-0.15195**	0.41051***	-0.29408***	-0.0158	0.0342	0.36337**	-0.25174**
Factory orders	0.22588*	-0.24242**	0.06979**	-0.01869	0.07049	-0.01823	0.1448***	-0.09104**	-0.11259	0.11407*	0.08856	-0.02839
GDP	1.04776***	-0.96689***	0.22276***	-0.13497***	0.3015***	-0.18094**	0.29061***	-0.20286***	-0.17911*	0.20479**	0.25799*	-0.20698*
Housing starts	0.75767**	-0.70342***	0.13556***	-0.09225**	0.07908	-0.04521	0.25881***	-0.18938***	-0.01553	0.04758	0.27817*	-0.20299*
Industrial production	0.6402**	-0.5778**	0.11675***	-0.0815**	0.0834	-0.05286	0.21529***	-0.16092***	-0.21996**	0.17451**	0.38129**	-0.30157***
New home sales	0.97426***	-0.89951***	0.14685***	-0.08583**	0.2724***	-0.17463***	0.39026***	-0.27766***	-0.30446***	0.2725***	0.22217	-0.16814
Non-farm employment	-0.0937	0.25642***	0.16498***	0.07474***	0.25466***	0.08385**	0.30235***	-0.13515***	0.04956	0.08889*	0.17232***	-0.08142
Pending home sales	1.18892***	-1.10572***	0.07322*	-0.04953	0.167**	-0.11468*	0.45683***	-0.32407***	-0.14452	0.14257*	0.78572***	-0.58446***
Personal consumption	-0.31507	0.29275	-0.05932	0.08078*	-0.21679**	0.22255***	0.2456***	-0.18434***	-0.07594	0.11476	0.44399***	-0.28606**
Personal income	-0.19473	0.18786	-0.00613	0.04084	-0.12053	0.14892**	0.09199	-0.06033	-0.16891	0.18424**	0.45814***	-0.31138**
Producer price index	0.78935**	-0.75476***	0.159***	-0.0966**	0.05385	0.01382	0.1851**	-0.13223**	-0.09369	0.15482*	0.05409	-0.0349
Trade balance	0.03272	0.0232	0.12294***	-0.05258*	0.15128***	-0.0599	-0.03514	0.03411	-0.40529***	0.38817**	0.06636	-0.04655
Announcements specific to commodity markets												
Crude Oil Weekly inventory	-0.70751***	0.74816***									0.40076***	0.15626***
Natural Gas Weekly inventory												
Observations	1193455		1190001		1180816		1138696		749168		1101836	
R ²	0.069734		0.08076		0.077465		0.074334		0.058964		0.139725	

This table presents estimates of eq. 10 using financialization variable WT_t . The equation is $\sigma_t^2 = \alpha_0 + \alpha_1 \sigma_{t-1}^2 + \alpha_2 \epsilon_t^2 + \sum_{m=1}^{22} \Phi_m D_{m,t} + \beta X_{i,t} + \sum_{k=1}^n \phi_k I_{k,t} + \sum_{h=1}^{23} \rho_h D_h$ where $I_{k,t} = D_{m,t} \cdot X_{i,t}$ and $D_{m,t}$ is a macro announcement dummy variable for release m . The Φ_m coefficients capture the instantaneous change in the conditional variance when an announcement has just occurred. The ϕ_m coefficients capture the conditional variance when an announcement has just occurred in conjunction with the level of financialization.

Table 31: Announcement (macro & commodity-specific) and financialization (PCA) effects on futures conditional variance - Full Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m
Macroeconomic News Announcements												
Initial jobless claims	0.03437***	-0.00823	0.0552***	-0.00654***	0.07888***	0.0059**	0.0269***	-0.01603***	0.0773***	0.02253***	-0.00529	-0.01618***
ADP Employment	-0.00477	0.00458	0.03562***	0.00624**	0.04721***	0.00693	0.03104***	-0.01849***	-0.02553**	0.00988	0.01291	-0.01455
CB Consumer	0.04128***	-0.01778	0.03604***	-0.00128	0.05207***	-0.01068*	0.03156***	-0.02712***	0.02804***	0.00982	-0.0037	-0.00626
Advance retail sales	0.03765***	0.01023	0.0758***	0.01642***	0.11174***	0.01855**	0.03072**	-0.02021***	0.05521***	0.02424**	0.03283***	-0.02836***
Building permit	0.02144**	-0.02233*	0.029***	-0.01037***	0.02609***	-0.0075	0.00892	-0.01717***	0.05739***	0.01372	0.02775***	-0.01562
Construction spending	0.05934***	-0.0268**	0.05567***	0.00463	0.06674***	0.00187	0.04501***	-0.0362***	0.04983***	0.00036	0.02164*	-0.00452
Consumer credit	0.00807	-0.00504	0.0073*	0.00036	0.01799**	0.00085	0.0049	-0.00703	0.00445	-0.00307	0.00077	0.00164
Consumer price index	0.06615***	-0.07188***	0.11143***	0.03583***	0.15711***	0.0776***	0.09737***	0.01921***	0.09002***	0.00887	0.02472*	-0.02282
Durable goods orders	0.03227***	-0.00746	0.02929***	-0.00587*	0.04692***	-0.00369	0.01002*	-0.01642***	0.05537***	0.01923*	0.00906	-0.00243
Existing home sales	0.03883***	-0.01052	0.03349***	-0.00791**	0.03398***	-0.0116**	0.02534***	-0.02499***	0.02676***	-0.0231**	0.03906***	-0.01568
Factory orders	0.03896***	0.01378	0.04819***	-0.00166	0.049***	-0.00167	0.02633***	-0.01345***	0.02636**	0.00967	0.05118***	0.01343
GDP	0.02088*	-0.00101	0.06535***	-0.00903**	0.08673***	0.01293**	0.02565***	-0.01752***	0.06974***	0.02212*	-0.01102	-0.0037
Housing starts	0.02013*	-0.02	0.02812***	-0.00765**	0.02527***	-0.00191	0.01119*	-0.01676***	0.04328***	0.00276	0.01637	-0.0132
Industrial production	0.00039	-0.02707**	0.02192***	-0.00784**	0.02073***	-0.00423	0.00464	-0.01413***	-0.00553	0.01398	-0.00774	-0.01803*
New home sales	0.01775*	-0.00382	0.04679***	-0.00666**	0.06506***	-0.01446***	0.02708***	-0.02534***	0.02931***	0.03269***	0.00492	-0.0074
Non-farm employment	0.18348***	0.00754	0.25161***	0.00918***	0.35358***	0.00997**	0.12672***	-0.02233***	0.15749***	0.01124*	0.06909***	-0.01272**
Pending home sales	0.02983***	0.00692	0.01562**	-0.00387	0.03093***	-0.00866	0.03397***	-0.03016***	0.03012***	0.01139	0.03304***	-0.03919***
Personal consumption	0.00782	0.00636	0.03474***	0.0066	0.04712***	0.02018***	0.00518	-0.01792***	0.064***	0.01381	0.07445***	-0.00539
Personal income	0.01186	0.00395	0.04151***	0.00312	0.05608***	0.01411**	0.01327**	-0.00574	0.05648***	0.01527	0.05566***	-0.00347
Producer price index	0.04478***	6e-05	0.04641***	-0.00684**	0.07015***	0.00472	0.01203**	-0.01164**	0.09595***	0.01818*	0.00957	-0.00571
Trade balance	0.05754***	0.00611	0.06174***	-0.00208	0.08048***	-0.00478	0.0095*	0.00518	0.06834***	0.04858***	0.00677	-0.00458
Announcements specific to commodity markets												
Crude Oil Weekly inventory	0.10054***	0.04502***									0.60201***	0.01299***
Natural Gas Weekly inventory												
Observations	1193455		1190001		1180816		1138696		749168		1101836	
R ²	0.069413		0.083473		0.080587		0.077022		0.057595		0.138209	

This table presents estimates of eq. 10 using financialization variable PCA_t . The equation is $\sigma_t^2 = \alpha_0 + \alpha_1 \sigma_{t-1}^2 + \alpha_2 \epsilon_t^2 + \sum_{m=1}^{22} \Phi_m D_{m,t} + \beta X_{i,t} + \sum_{k=1}^n \phi_k I_{kt} + \sum_{h=1}^{23} \rho_h D_{h,t}$ where $I_{kt} = D_{m,t} \cdot X_{i,t}$ and $D_{m,t}$ is a macro announcement dummy variable for release m . The Φ_m coefficients capture the instantaneous change in the conditional variance when an announcement has just occurred. The ϕ_m coefficients capture the conditional variance when an announcement has just occurred in conjunction with the level of financialization.

Table 32: Announcement (macro & commodity-specific) and financialization (NLS) effects on futures returns (Anderson) - Full Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m
Macroeconomic News Announcements												
Initial jobless claims	-0.20891***	0.9061***	0.50731***	-0.97114***	0.51063***	-2.13981***	0.00021	0.07507	0.01039	-0.032	-0.00357	-0.19485
ADP Employment	0.45173**	-1.46738*	-1.14222***	2.43057***	-0.72094***	2.70248***	0.02497***	0.03865	0.00844	-0.14542	-0.07585*	-1.51614
CB Consumer	0.14484***	-0.63881**	-0.08878***	0.16713***	-0.10388***	0.29044**	0.01533	-0.05446	-0.06249**	0.1521**	0.04502	0.01895
Advance retail sales	0.34355***	-1.28088***	-0.15814***	0.27864**	-0.10648	0.33985	0.01673***	-0.17414**	-0.01786	0.12854	-0.03098	-0.31058
Building permit	0.00073	0.06874	-0.04885**	0.07564	-0.08094***	0.2715**	0.00333	0.04785	-0.0267	-0.01651	0.08406*	0.44162
Construction spending	0.00543	-0.27533	-0.00355	-0.04469	-0.0406	0.10324	-2e-05	-0.2557***	-0.02053	0.03996	-0.02258	-0.29357
Consumer credit	0.04711**	-0.24929**	0.00315	-0.00784	-0.01675	0.08063	0.00687	-0.00737	0.00862	0.00177	-0.00368	-0.01041
Consumer price index	0.15051***	-0.38807*	-0.23136***	0.50444***	-0.34769***	1.08871***	-0.04819***	-0.2652***	-0.14212***	0.33265***	0.01172	0.2972
Durable goods orders	0.15807***	-0.85995***	-0.09324***	0.21884***	-0.12537***	0.48489***	0.01974*	-0.03208	-0.03134	0.10911	-0.00619	-0.15486
Existing home sales	0.0952***	-0.5194**	-0.02447	0.07352	0.01577	0.04042	0.03956***	-0.18063**	0.00982	-0.01239	0.08939*	0.43429
Factory orders	0.08365***	-0.64996***	-0.10092***	0.17834**	-0.07923**	0.21294	-0.00098	0.12717*	-0.02042	-0.00144	0.15062***	1.0821***
GDP	0.05753	-0.28002	-0.20942***	0.42841***	-0.21569***	0.64717***	0.02138*	-0.03772	-0.06098***	0.04409	-0.03729	-0.34389
Housing starts	0.04015	-0.2285	-0.09896***	0.18737***	-0.0922**	0.21459	0.00985	0.04459	-5e-04	-0.02748	0.02681	0.449
Industrial production	0.0209	-0.25746	-0.01598	-0.04692	-0.00092	-0.22265	-0.00598	-0.07704	-0.02874	0.03408	-0.02236	-0.11466
New home sales	0.16685***	-0.83721***	-0.06506***	0.08061	-0.03309	-0.05022	0.04081***	-0.13435*	0.0218	-0.06187	-0.02786	-0.06245
Non-farm employment	1.35726***	-4.93248***	-3.19871***	6.64971***	-1.02677***	4.36787***	0.02693***	0.89542***	-0.01806	0.52681	-0.28623***	-8.25547***
Pending home sales	0.04473	-0.07683	-0.03501	0.0416	-0.02613	0.02513	0.01395	-0.22954**	-0.04356*	0.04623	-0.03032	-0.63082**
Personal consumption	-0.03606	0.0904	-0.08001***	0.15362**	-0.01358	0.02453	0.00472	0.20674*	-0.01678	0.04889	0.0011	0.48395
Personal income	-0.01867	-0.04312	-0.1523	0.32489	-0.41786**	1.73529**	-0.02497*	-0.39453*	-0.01398	-0.01605	-0.04883	-1.39969
Producer price index	0.11721***	-0.63144***	-0.08903***	0.18925***	0.03121	-0.21058	0.00955	-0.04159	-0.08073**	0.14271**	-0.03766	-0.19559
Trade balance	0.00912	-0.23206	-0.08945**	0.23531**	-0.0647	0.26249	-0.00284	-0.1553	-0.00057	0.04221	-0.02635	-0.17741
Announcements specific to commodity markets												
Crude Oil Weekly inventory	-0.11351***	-0.356***									-0.02081***	-0.29209***
Natural Gas Weekly inventory												
Observations	1193455	0.063036	1190001	0.003063	1180816	0.000705	1138696	0.000328	749168	0.000133	1101836	0.001932
R ²												

This table presents estimates of eq. 6, $R_t^{t+\tau} = \alpha + \sum_{m=1}^{22} \gamma_m S_{m,t} + \delta X_{t,i} + \sum_{m=1}^{22} \theta_m (S_{m,t} \cdot X_t) + \beta R_{t-\tau}^t + \epsilon_t$ using the method proposed by [Andersen et al. \(2007\)](#) and financialization variable NLS_t . The γ_m coefficients capture the instantaneous change in return when an announcement has just occurred and especially if that announcement was unanticipated. The coefficients θ_m capture the instantaneous change in return when an announcement has just occurred in conjunction with the level of financialization.

Table 33: Announcement (macro & commodity-specific) and financialization (MSCT) effects on futures returns (Anderson) - Full Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m
Macroeconomic News Announcements												
Initial jobless claims	-0.67794***	3.12017***	0.03195	0.04917	-0.20177**	1.24934***	-1.01824***	3.21269***	-0.01397	0.02323	0.1097	-0.43299
ADP Employment	0.50903	-2.14381	-0.4162	0.99778	0.64175**	-2.73129***	0.45531	-1.38772	0.69	-1.9272	-0.47827	2.06259
CB Consumer	0.20013	-0.84023	0.06419	-0.2893**	0.08507	-0.48313**	0.13493***	-0.37092**	0.01429	-0.05217	0.02897	0.05342
Advance retail sales	0.14572	-0.45335	-0.25083***	0.64552**	-0.15033	0.42034	0.4699***	-1.3663***	0.24274	-0.69388	0.28765	-1.2416
Building permit	-0.10029	0.65151	0.04623	-0.20712	0.0149	-0.16046	0.00601	-0.00704	-0.04607	0.0378	0.12356	-0.34344
Construction spending	0.16648	-1.15194**	0.04867*	-0.21332***	0.08287	-0.39379*	0.00917	-0.03016	-0.09164	0.20709	0.07985	-0.25978
Consumer credit	-0.05195	0.33235	0.04145	-0.12255	0.07716**	-0.26229**	0.07125***	-0.19207**	-0.00352	0.02594	-0.03806	0.13967
Consumer price index	0.60061***	-3.01995***	-0.46468***	1.63686***	0.36514***	-1.90912***	-0.27955***	0.77607***	-0.56038***	1.15892***	-0.12099	0.36218
Durable goods orders	0.30429**	-1.62314**	-0.20179***	0.69858***	0.20995***	-0.9062***	0.21842***	-0.61854***	-0.14049	0.3662	0.10203	-0.28336
Existing home sales	0.14684	-0.58592	0.0955*	-0.3012*	0.09509**	-0.2746	0.15792***	-0.40824***	0.16495	-0.37892	0.12119	-0.42035
Factory orders	0.13238	-1.19791**	0.04561	-0.26187*	-0.01704	-0.05765	-0.13725***	0.44763***	0.06013	-0.1888	-0.13539	0.48312
GDP	0.00368	0.06479	-0.00351	-0.13506	-0.10752	0.14444	0.27624***	-0.83459***	-0.29761**	0.59893*	0.04384	-0.16627
Housing starts	-0.09604	0.56635	-0.11326*	0.23484	-0.17337**	0.42133	0.00727	0.00998	-0.16449	0.36958	0.12802	-0.55131
Industrial production	-0.02707	0.03777	-0.06771	0.10474	-0.03191	-0.05643	0.0651	-0.23606*	-0.09152	0.17946	0.12858	-0.54395
New home sales	-0.01829	0.20587	0.07309	-0.32865**	-0.0903	0.15357	0.39942***	-1.07222***	-0.02897	0.09453	-0.09873	0.30031
Non-farm employment	1.30199**	-6.0231**	-1.13455***	3.67459***	0.7055***	-2.89844***	1.45923***	-4.58652***	1.66636***	-4.62629***	-0.54189	2.44873
Pending home sales	0.03996	-0.06692	-0.04549	0.08403	0.03316	-0.21346	0.0297	-0.07542	0.0453	-0.1811	0.18045	-0.52052
Personal consumption	-0.11326	0.54016	0.03532	-0.17393	0.08204	-0.33125	0.06255	-0.18948	-0.06945	0.17314	0.08678	-0.49539
Personal income	0.08176	-0.55364	0.06409	-0.22143	0.01066	-0.08471	-0.17353	0.53466	-0.11162	0.28543	0.10521	-0.40266
Producer price index	0.26912**	-1.40456*	0.04989	-0.21998	0.09831	-0.45588*	0.06832	-0.19842	0.22144	-0.59176	0.00695	-0.06727
Trade balance	0.19506	-1.29194	-0.02406	0.06721	-0.0383	0.16374	0.01369	-0.07301	-0.54948*	1.31424*	-0.19903	0.74776
Announcements specific to commodity markets												
Crude Oil Weekly inventory	-0.08439***		-0.48809***									
Natural Gas Weekly inventory												
Observations	1193455		1190001		1180816		1138696		749168		1101836	
R ²	0.031393		0.001878		0.000661		0.001072		0.000246		0.001495	

This table presents estimates of eq. 6, $R_t^{t+\tau} = \alpha + \sum_{m=1}^{22} \gamma_m S_{m,t} + \delta X_{t,i} + \sum_{m=1}^{22} \theta_m (S_{m,t} \cdot X_t) + \beta R_{t-\tau}^t + \epsilon_t$ using the method proposed by [Andersen et al. \(2007\)](#) and financialization variable $MSCT_t$. The γ_m coefficients capture the instantaneous change in return when an announcement has just occurred and especially if that announcement was not anticipated. The coefficients θ_m capture the instantaneous change in return when an announcement has just occurred in conjunction with the level of financialization.

Table 34: Announcement (macro & commodity-specific) and financialization (WT) effects on futures returns (Anderson) - Full Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m
Macroeconomic News Announcements												
Initial jobless claims	-3.47061***	3.22804***	1.84374***	-1.75137***	-2.63853***	2.40855***	-2.59579***	1.99658***	0.54231	-0.4512	0.45536	-0.36343
ADP Employment	-3.61158	3.40549	-1.5673***	1.43545***	2.85063***	-2.53553***	1.09879*	-0.77484*	-0.24006	0.17386	-1.71098	1.3632
CB Consumer	-0.48537	0.48521	-0.1653***	0.16918***	0.45761***	-0.42633***	0.38805***	-0.28484***	0.18649	-0.15799	0.01478	0.02191
Advance retail sales	3.15747***	-2.97006***	-0.03381	0.00227	-0.02843	0.00033	1.21178***	-0.92125***	-0.04007	0.02732	0.89494	-0.7204
Building permit	-0.35266	0.33254	0.07737	-0.08488	0.20665	-0.19446	0.00269	0.00067	-0.09347	0.0493	0.26999	-0.18369
Construction spending	0.1125	-0.14464	0.1283*	-0.13716*	0.23361	-0.21661	0.18312	-0.14072	-0.16078	0.12773	0.23201	-0.17145
Consumer credit	0.85062***	-0.78193***	0.02635	-0.02266	0.18063**	-0.15035**	0.13612**	-0.09807*	-0.11349	0.09795	-0.06043	0.04524
Consumer price index	-1.01432*	0.81256	-1.2505***	1.11319***	2.13829***	-1.89721***	-0.50193***	0.36303***	-0.38277***	0.27938***	-0.48565	0.35943
Durable goods orders	-0.55688	0.52276	-0.37363***	0.33823***	0.77965***	-0.68943***	0.42529***	-0.30888**	0.0384	-0.02015	0.34374	-0.24082
Existing home sales	-0.42777	0.41474	0.11334	-0.09753	0.18921	-0.14135	0.29681**	-0.20607**	0.20317	-0.16211	0.09614	-0.06617
Factory orders	1.20413***	-1.09653***	-0.15472**	0.16836**	0.05216	-0.07301	-0.28823***	0.22484***	0.03873	-0.04821	-0.50361*	0.38887*
GDP	-0.29158	0.27786	-0.41888***	0.41137***	0.32039*	-0.33029**	0.479***	-0.36378***	-0.12033	0.0501	0.1211	-0.09366
Housing starts	-0.57454	0.52585	0.01904	-0.04537	-0.05356	0.00385	0.1091	-0.0727	-0.06636	0.04892	0.31498	-0.25548
Industrial production	-0.51596	0.45216	-0.14871	0.09992	-0.16737	0.10059	0.17216*	-0.14253*	-0.16905	0.1207	0.52585	-0.42062
New home sales	1.59801**	-1.48008**	0.07959	-0.09916**	-0.13918	0.0785	0.73844***	-0.53019***	0.0442	-0.02764	-0.17579	0.11994
Non-farm employment	-1.90092	1.80994	-3.58347***	3.33853***	2.48465***	-2.23361***	1.90464***	-1.35802***	2.02044***	-1.46048***	0.20424	-0.1547
Pending home sales	-0.13715	0.14967	-0.00245	-0.01407	0.1226	-0.12442	0.11809	-0.08761	0.15832	-0.15548	0.21358	-0.12744
Personal consumption	-0.19528	0.16415	0.16484	-0.16107*	0.21568	-0.1889	0.05915	-0.0437	0.00566	-0.01195	0.14078	-0.13384
Personal income	0.12618	-0.14444	0.57765	-0.53167	1.20574	-1.06991	-0.53722	0.39041	-0.03633	0.01578	1.1627	-0.93563
Producer price index	-0.16761	0.18361	-0.23966**	0.22737**	0.20676	-0.19397	0.14576	-0.10812	0.46253**	-0.39415**	0.08435	-0.07499
Trade balance	0.37669	-0.3474	-0.17267*	0.16002*	0.17967	-0.16538	0.07577	-0.06496	-0.30491	0.25924	-0.41404	0.32464
Announcements specific to commodity markets												
Crude Oil Weekly inventory	-0.53283***	0.3104***									-0.03114***	0.10831***
Natural Gas Weekly inventory												
Observations	1193455		1190001		1180816		1138696		749168		1101836	
R ²	0.140568		0.009386		0.000801		0.001013		0.000115		0.004021	

This table presents estimates of eq. 6, $R_t^{i+\tau} = \alpha + \sum_{m=1}^{22} \gamma_m S_{m,t} + \delta X_{i,t} + \sum_{m=1}^{22} \theta_m (S_{m,t} \cdot X_t) + \beta R_{t-\tau}^i + \epsilon_t$ using the method proposed by [Andersen et al. \(2007\)](#) and financialization variable WT_t . The γ_m coefficients capture the instantaneous change in return when an announcement has just occurred and especially if that announcement was unanticipated. The coefficients θ_m capture the instantaneous change in return when an announcement has just occurred in conjunction with the level of financialization.

Table 35: Announcement (macro & commodity-specific) and financialization (PCA) effects on futures returns (Anderson) - Full Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m
Macroeconomic News Announcements												
Initial jobless claims	-0.13513***	0.08657***	0.15458***	-1.87969***	0.19819***	-1.85525***	0.00617	0.01278	-0.01364	-0.22443*	-0.00185	-0.01729
ADP Employment	0.15846**	-0.07297	-0.07215***	0.13577***	-0.12565***	0.199***	0.06688***	0.19864***	0.01848	-0.00651	0.10142	0.12337
CB Consumer	0.05875***	-0.03365	-0.03136***	0.09362**	-0.04756***	-0.22774***	0.01607*	-0.1665***	-0.00647	-0.00849	0.04277*	0.00167
Advance retail sales	0.08357***	-0.02976	-0.03018***	0.01418***	-0.02831*	-0.0362***	0.03417**	-0.02488***	-0.00711	-0.01972	-0.03443	-0.03738
Building permit	0.00954	0.01929	-0.02044**	0.00311	-0.02341	0.00886	0.0038	-0.09985***	-0.03241	-0.04393	0.03492	-0.0205
Construction spending	0.02834*	-0.03433**	-0.02877***	-0.00902	-0.0242*	-0.01826	-0.00034	-0.00056	-0.0044	0.00476	0.01216	-0.0059
Consumer credit	0.00418	0.00673	0.00014	-0.01214**	0.00274	-0.02096	0.00887**	-0.00575	0.00762	0.01511	-0.00173	0.00508
Consumer price index	0.08486***	-0.08789***	-0.0506***	-0.00292	-0.11663***	-0.01411**	-0.02895***	-0.01097**	-0.05214***	0.00393	-0.02783	0.01997
Durable goods orders	0.03093	-0.056**	-0.02039**	0.08533***	-0.03905*	-0.15793***	0.02079*	0.04409***	0.01384	0.04409***	0.02852	-0.01286
Existing home sales	0.04783**	-0.02601	-0.00043	0.03214***	0.02117	-0.06186***	0.02716**	-0.03423***	0.00545	-0.00105	0.01367	-0.02495
Factory orders	-0.08318***	-0.00175	-0.04163***	0.01038*	-0.03594**	-0.01242	0.00605	-0.0214**	-0.0196	-0.02068	-0.01075	0.00777
GDP	0.01518	-0.00142	-0.05769***	0.01576**	-0.07166***	-0.00891	0.00598	0.02435***	-0.05941***	-0.00848	-0.00114	-0.00031
Housing starts	-0.00028	0.01353	-0.03369***	0.03332***	-0.04933***	-0.02601*	0.0125	-0.04486***	-0.01139	0.02165	-0.01453	-0.02931
Industrial production	-0.02018	-0.00474	-0.03281***	-0.00365	-0.04812***	0.00151	-0.01255	-0.00431	-0.01828	0.01813	-0.01337	-0.02283
New home sales	0.01816	-0.00369	-0.03503***	0.00514	-0.04639***	-0.01113*	0.05155***	-0.00117	0.00923	-0.00208	-0.02057	0.01338
Non-farm employment	0.25602***	-0.15809**	-0.28367***	0.01019**	-0.13607***	0.00735	0.09312***	-0.05929***	0.05851***	0.00905	0.14526	0.14724
Pending home sales	0.03069	-0.00326	-0.0183**	0.34619***	-0.0249*	-0.24573***	0.00513	-0.27239***	-0.03514*	-0.24792***	0.05463***	-0.00096
Personal consumption	-0.02194	0.0146	-0.02245**	0.00012	-0.00704	-0.00992	0.00269	-0.00485	-0.00455	-0.02459	-0.0433*	-0.01986
Personal income	-0.01339	-0.01494	-0.0314	-0.01718**	-0.03863	-0.01598	-0.01387	-0.01025	0.00302	0.00884	0.01514	-0.00127
Producer price index	0.02905	-0.0465**	-0.02507***	-0.04096	-0.02266	-0.06869	0.00437	0.04345	-0.01805	0.0478	-0.0101	4e-05
Trade balance	-0.02518	-0.03231	-0.01348	-0.01915**	-0.01292	-0.01465	-0.01013	-0.01131	0.00941	-0.06897***	-0.00599	0.03325
Announcements specific to commodity markets												
Crude Oil Weekly inventory	-0.16627***	-0.01642***										
Natural Gas Weekly inventory											-0.01292*	0.00612
Observations	1193455	1190001	1190001	1180816	1138696	1138696	749168	1101836				
R ²	0.041716	0.004614	0.00076	0.00076	0.001469	0.000105	0.000779					

This table presents estimates of eq. 6, $R_t^{t+\tau} = \alpha + \sum_{m=1}^{22} \gamma_m S_{m,t} + \delta X_{t,i} + \sum_{m=1}^{22} \theta_m (S_{m,t} \cdot X_t) + \beta R_t^{t-\tau} + \epsilon_t$ using the method proposed by [Andersen et al. \(2007\)](#) and financialization variable PCA_t . The γ_m coefficients capture the instantaneous change in return when an announcement has just occurred and especially if that announcement was unanticipated. The coefficients θ_m capture the instantaneous change in return when an announcement has just occurred in conjunction with the level of financialization.

Table 36: Announcement (macro & commodity-specific) and financialization (MM-NLS) effects on futures returns (Anderson) - Full Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m
Macroeconomic News Announcements												
Initial jobless claims	-0.20242***	1.01667***	0.25785***	-0.81011***	0.10396***	-0.11235	-0.01124	-0.0128	0.01266	-0.03962	0.01652	0.01015
ADP Employment	0.48914**	-2.31874**	-0.01683	-0.25338	-0.24641**	0.37395	0.02418***	0.04222	0.0103	-0.11809	-0.02352**	0.16498
CB Consumer	0.12569**	-0.70946	-0.04564***	0.07152	-0.09001***	0.30448***	0.01633	-0.00368	-0.06253**	0.1589**	0.0519*	0.14898
Advance retail sales	0.31825***	-1.69284***	0.00671	-0.191*	-0.10003**	0.434	0.01506***	-0.14096**	-0.02226	0.12988	-0.03119	-0.52237
Building permit	-0.03869	0.45079	-0.02632**	0.00916	-0.05823***	0.20741*	0.00189	0.0407	-0.02542	-0.0214	0.04766*	0.19613
Construction spending	0.03005	-0.58232*	-0.04197***	0.08019**	-0.04184*	0.15241	0.00932	-0.17474**	-0.0275	0.05636	0.00261	-0.19424
Consumer credit	0.07103***	-0.54514***	-0.0085	0.04117	-0.00872	0.06168	0.00669	-0.00023	0.009	0.00757	-0.00053	-0.10741
Consumer price index	0.18511***	-0.93891***	-0.21462***	0.80433***	-0.26627***	1.01547***	-0.04049***	-0.25289***	-0.15049***	0.33834***	-0.01163	0.26804
Durable goods orders	0.1092**	-0.81831*	-0.07391***	0.24626***	-0.08985***	0.41502***	0.02343*	-0.06541	-0.03627	0.13155	0.01645	-0.20552
Existing home sales	0.12911***	-0.96966**	-0.00526	0.02752	0.02508	0.00254	0.04408***	-0.15252**	0.01668	-0.033	0.04665	0.1885
Factory orders	0.08536***	-0.75417***	-0.07905***	0.16492***	-0.06879***	0.2381*	0.00578	0.11293	-0.02378	0.00894	0.05684*	0.76126***
GDP	0.04587	-0.28182	-0.08037***	0.14573*	-0.14955***	0.44934***	0.02136*	0.01229	-0.07214***	0.07859	-0.00455	-0.24054
Housing starts	-0.02158	0.20016	-0.03906**	0.02361	-0.05419**	0.03659	0.00704	0.05658	-0.0014	-0.02186	-0.02248	0.15942
Industrial production	-0.03726	0.15147	-0.02532	-0.04084	-0.03094	-0.11772	-0.00361	-0.07949	-0.03216	0.04662	-0.01494	0.06097
New home sales	0.17659***	-1.28535**	-0.05462***	0.08864**	-0.03662*	-0.04532	0.04551***	-0.11982*	0.0301	-0.08228	-0.03857	-0.35081
Non-farm employment	0.44031*	-2.1398	-0.5988***	2.16072***	-0.5084***	2.77282***	0.00994**	0.87883***	0.00207	0.14618	-0.00017	-3.42111*
Pending home sales	0.04825	-0.13035	-0.02602	0.03032	-0.02676	0.03559	0.01716	-0.16025*	-0.04606	0.05728	0.02235	-0.4842**
Personal consumption	-0.09307	0.57545	-0.02589	0.01737	-0.01249	0.02432	-0.0016	0.17719*	-0.02114	0.06181	-0.01332	0.28635
Personal income	-0.01054	-0.10882	0.0135	-0.09583	-0.24985*	1.44771*	-0.01432*	-0.36944	-0.02048	0.0284	0.00765	-1.52064
Producer price index	0.10005**	-0.7136*	-0.06214***	0.16732***	0.02754	-0.27997*	0.01292	-0.07199	-0.09377***	0.18959**	-0.02862	-0.24588
Trade balance	0.02664	-0.45682	-0.06245**	0.20809**	-0.06079	0.32216	0.00671	-0.15975	-0.01326	0.08297	0.01086	0.15833
Announcements specific to commodity markets												
Crude Oil Weekly inventory	-0.1957***	0.07786**										
Natural Gas Weekly inventory											0.20751***	1.84355***
Observations	1193455		1190001		1180816		1138696		749168		1101836	
R ²	0.142498		0.001073		0.000662		0.003324		0.000116		0.65202	

This table presents estimates of eq. 6, $R_t^{t+\tau} = \alpha + \sum_{m=1}^{22} \gamma_m S_{m,t} + \delta X_{t,i} + \sum_{m=1}^{22} \theta_m (S_{m,t} \cdot X_t) + \beta R_{t-\tau}^t + \epsilon_t$ using the method proposed by [Andersen et al. \(2007\)](#) and financialization variable $MM_N L S_t$. The γ_m coefficients capture the instantaneous change in return when an announcement has just occurred and especially if that announcement was unanticipated. The coefficients θ_m capture the instantaneous change in return when an announcement has just occurred in conjunction with the level of financialization.

Table 37: Announcement (macro & commodity-specific) and financialization (SWAP-NLS) effects on futures returns (Anderson) - Full Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m
Macroeconomic News Announcements												
Initial jobless claims	-0.14864***	-0.60666***	0.19349***	0.51435***	0.09237***	0.15456	0.46654***	-2.56504***	-0.01509	0.08848	-0.0246	0.64524
ADP Employment	0.4254**	1.79301**	-0.67729***	-1.78049***	-0.27319***	-3.35954***	0.05423	-0.1536	-0.09736	0.42441	-0.05017*	1.01695
CB Consumer	0.09623***	0.47601***	-0.03545***	-0.0421	-0.04457***	-0.0308	-0.0739***	0.36874***	-0.00455	-0.24118**	0.042	0.01055
Advance retail sales	0.25601***	1.11639***	-0.19789***	-0.48037***	-0.03356*	-0.14731	-0.11299***	0.68148***	0.0096	-0.06952	-0.00483	-0.23615
Building permit	0.01802	0.04389	-0.03723***	-0.06536	-0.04022***	-0.32503*	0.01251	-0.04071	-0.0305	0.01137	0.07886	-0.40128
Construction spending	-0.02537	0.15315	-0.00856	0.04284**	-0.01751	0.05903	-0.09978***	0.41311***	-0.00324	0.0123	0.0098	0.02101
Consumer credit	0.02945**	0.18469**	0.00898	0.03672	0.00054	-0.0064	0.00075	0.0264	0.01195	-0.01427	-0.00613	0.03329
Consumer price index	-0.11153***	-0.07785	-0.0266*	0.18965**	-0.12615***	-0.79148***	0.225***	-0.79399***	-0.02565***	-0.42502***	0.04658	-0.61827
Durable goods orders	0.07578***	0.47102***	-0.02242	-0.01391	-0.01892	0.30065	-0.01914	0.15399	0.00858	-0.13958	-0.01039	0.21955
Existing home sales	0.04085**	0.22984*	-0.01057	-0.06783	0.02462**	0.25469*	-0.05471	0.33434***	0.00503	0.02697	0.09304	-0.49052
Factory orders	0.0207***	-0.38575***	-0.03265**	0.01858	-0.03136**	-0.36103**	0.05369	-0.22151*	-0.02092	0.00273	0.12918**	-1.02335***
GDP	0.0486*	0.28249**	-0.06873***	-0.11962*	-0.08305***	-0.46152**	-0.06497**	0.30501**	-0.04807**	-0.08042	-0.02689	0.2451
Housing starts	0.0347	0.23457	-0.07533***	-0.1858***	-0.05753***	-0.21871	-0.0277	0.18483	-0.00579	-0.0063	0.04074	-0.54474
Industrial production	0.01742	0.31459*	-0.00806	0.11534*	-0.04233***	0.36991	-0.05013**	0.20094**	-0.01588	-0.07185	-0.02868	0.18796
New home sales	0.08253**	0.44129**	-0.04018***	0.00259	-0.04148***	0.06581	-0.0718***	0.5137***	0.00061	0.10055	-0.00463	-0.14823
Non-farm employment	1.9032***	9.20725***	-2.62787***	-7.03122***	-0.11022**	-0.76238	-0.63048***	3.45374***	-0.0833	0.44676	-0.07988*	3.14144*
Pending home sales	0.04645*	0.11855	-0.02068	-0.00798	-0.02019	0.07623	-0.0489	0.22531*	-0.02484	-0.07093	-0.01009	0.49729
Personal consumption	-0.01475	0.01747	-0.05086**	-0.11983	-0.00927	0.06295	0.04163	-0.18788	0.00418	-0.10939	-0.00199	-0.59521*
Personal income	-0.02297	0.03287	-0.10292*	-0.28281*	-0.11325***	-2.59509***	-0.0864	0.39238	-0.01589	-2e-04	-0.01486	0.84751
Producer price index	0.06728***	0.38254***	-0.02129	-0.01006	-0.01358	0.30528	-0.01609	0.09381	-0.02586	-0.09538	-0.01704	0.05411
Trade balance	-0.0096	0.17997	-0.06659**	-0.37748**	-0.02033	-0.60028**	-0.06779	0.22022	0.01191	-0.31699*	-0.02525	0.19043
Announcements specific to commodity markets												
Crude Oil Weekly inventory	-0.15006***	0.19882**									-0.04181***	0.73971***
Natural Gas Weekly inventory												
Observations	1193455	0.106204	1190001	1180816	1138696	749168	1101836					
R ²			0.002541	0.000608	0.003449	1e-04	0.002815					

This table presents estimates of eq. 6, $R_t^{f+\tau} = \alpha + \sum_{m=1}^{22} \gamma_m S_{m,t} + \delta X_{i,t} + \sum_{m=1}^{22} \theta_m (S_{m,t} \cdot X_t) + \beta R_{t-\tau}^f + \epsilon_t$ using the method proposed by [Andersen et al. \(2007\)](#) and financialization variable ${}_5WAP-NLS_t$. The γ_m coefficients capture the instantaneous change in return when an announcement has just occurred and especially if that announcement was unanticipated. The coefficients θ_m capture the instantaneous change in return when an announcement has just occurred in conjunction with the level of financialization.

Table 38: Announcement (macro & commodity-specific) and financialization (NLS) effects on futures returns (Kurov) - ZLB Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m
Macroeconomic News Announcements												
Initial jobless claims	-0.70429***	3.78529***	1.09087***	-2.25841***	1.39832***	-4.71356***	-0.12351***	0.17344	0.12053	-0.00437	-0.0518	0.20917
ADP Employment	1.39435***	-7.12987***	-3.84009***	8.90483***	-1.98621***	5.40179***	0.24898**	-1.03637	0.04779	-0.64322	1.06705*	2.42274
CB Consumer	0.25256***	-1.62456***	-0.04746**	0.08402	-0.06657***	0.29594*	0.03378***	-0.06595	-0.11484**	0.19093*	0.0321	-0.07378
Advance retail sales	0.50785***	-2.82851***	-0.65198***	1.35297***	-0.51345***	1.65641***	0.00957	-0.64197***	-0.15308	0.2109	0.22209*	0.79246
Building permit	0.03023	-0.13412	-0.01199	-0.05338	-0.04015	0.00913	-0.00318	-0.03226	-0.01608	-0.03873	-0.00869	0.09105
Construction spending	0.03806	-0.44559*	0.04202	-0.121	0.06492	-0.22008	-0.00302	-0.37014***	0.09459	-0.13789	-0.11753*	-0.51691
Consumer credit	-0.01035	0.01027	-0.03464**	0.10232**	-0.02475*	0.18162***	0.00614	0.10737	0.04239	-0.0683	0.04942	0.2199
Consumer price index	-0.05367*	0.22486	-0.05491**	0.14857*	-0.0711**	0.2472	-0.00286	-0.27025**	0.02297	-0.1113	0.05088	0.20721
Durable goods orders	0.22761***	-1.12323***	-0.1184***	0.34599***	-0.10638***	0.58869***	0.02373***	0.15346	0.1488***	-0.18161**	-0.03788	-0.34522
Existing home sales	0.06734***	-0.1611	-0.09425***	0.24307***	-0.07379	0.34111*	0.05257***	-0.15687*	-0.05244	0.0895	0.094	0.47253
Factory orders	-0.02188	0.16758	-0.06297*	0.11496	-0.07732*	0.21643	-0.00072	-0.03245	0.00867	-0.03692	0.08812	0.56325
GDP	0.09399***	-0.41028**	-0.19392***	0.29743***	-0.33782***	0.19293***	0.04529***	0.16728	-0.26445***	0.37966**	-0.01533	-0.24002
Housing starts	0.15596***	-0.7602***	-0.11085***	0.14525**	-0.1609***	0.39369**	0.02807**	0.1126	-0.01944	0.01178	-0.02819	-0.12451
Industrial production	0.12147**	-0.60138**	-0.04582	0.08981	-0.08024*	0.23464	0.00612	-0.08287	-0.14273*	0.21769	0.029	-0.01512
New home sales	0.15372***	-0.69244***	-0.20306***	0.48779***	-0.11643***	0.33441*	0.0736***	-0.00415	-0.17056	0.28999	0.04644	0.13686
Non-farm employment	6.45167***	-25.2801***	-8.95331***	18.07887***	-7.96384***	27.72306***	1.57712***	0.35965	-0.74642	1.70491	-1.55898**	-17.777143***
Pending home sales	0.14767***	-0.90112***	0.00245	-0.02759	-0.01856	0.09937	0.03845***	-0.20744*	-0.11909	0.21728	-0.01862	-0.31759
Personal consumption	0.00221	0.19129	-0.07321*	0.19355*	0.02273	-0.12291	0.02338	0.18267	-0.03361	0.02948	-0.04455	-0.20038
Personal income	-0.16673	1.15899	0.0385	-0.14958	-0.25816	1.09273	0.01267	-0.53643	-0.31864	0.56008	-0.62609***	-4.00139***
Producer price index	0.07284***	-0.42142***	-0.06599***	0.14536**	-0.06633**	0.24047*	0.00701	-0.08332	0.02887	-0.00862	-0.0945**	-0.41908
Trade balance	-0.00985	-0.00227	-0.04424	0.07583	-0.02616	0.09349	-0.0116	0.03755	0.07156	-0.1219	-0.02821	-0.32178
Announcements specific to commodity markets												
Crude Oil Weekly inventory	-0.14108***	-0.0825										
Natural Gas Weekly inventory												
Observations	495652	0.003123	500857	0.003413	492438	0.001762	485244	0.000693	315201	0.000439	448530	0.002058
R ²												

This table presents estimates of eq. 6, $R_t^{t+\tau} = \alpha + \sum_{m=1}^{22} \gamma_m S_{m,t} + \delta X_{t,i} + \sum_{m=1}^{22} \theta_m (S_{m,t} \cdot X_t) + \beta R_{t-\tau}^t + \epsilon_t$ using the method proposed by Kurov et al. (2019) and financialization variable NLS_t . The γ_m coefficients capture the instantaneous change in return when an announcement has just occurred and especially if that announcement was unanticipated. The coefficients θ_m capture the instantaneous change in return when an announcement has just occurred in conjunction with the level of financialization.

Table 39: Announcement (macro & commodity-specific) and financialization (NLS) effects on futures conditional variance - ZLB Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m
Macroeconomic News Announcements												
Initial jobless claims	0.10694***	-0.42408***	0.05269***	-0.00488	0.10043***	-0.16325***	0.03223***	-0.03834	0.16713***	-0.16984***	-0.02784	-0.05767
ADP Employment	0.06941***	-0.53219***	0.10252***	-0.2171***	0.07215***	-0.272**	0.03539***	-0.05173	0.00482	0.01455	-0.00141	-0.08407
CB Consumer	0.16537***	-0.87541***	0.05819***	-0.07511	0.04967**	0.07337	0.0439***	-0.14431**	0.09397*	-0.11162	-0.00335	-0.01169
Advance retail sales	0.18938***	-0.86228***	0.13967***	-0.23979***	0.13996***	-0.30885***	0.05161***	-0.25845***	0.06489	-0.00631	-0.04253	-0.33072
Building permit	0.09698***	-0.52935***	0.12162***	-0.24222***	0.14168***	-0.4931***	0.02762***	-0.11219	0.03091	0.05324	-0.04738	-0.30239
Construction spending	0.2325***	-1.18295***	0.15062***	-0.30249***	0.12038***	-0.33192***	0.066***	-0.07152	0.02884	0.03642	0.03301	0.02156
Consumer credit	0.0453**	-0.22174	0.02772*	-0.06164	0.03052	-0.05207	0.00668	0.10916	-0.07063	0.13114	0.01441	0.06766
Consumer price index	0.04682	-0.40441*	0.14873***	-0.30026***	0.11292***	-0.23301	0.01046	-0.05358	0.05319	-0.0272	-0.00815	-0.03531
Durable goods orders	0.14852***	-0.70578***	0.04542***	0.00033	0.01576	0.27348**	0.02838***	-0.06921	0.1074**	-0.06132	0.01688	0.0068
Existing home sales	0.02751	-0.05921	0.06524***	-0.06524	0.05876**	-0.00113	0.02689***	-0.17408**	0.00283	0.00325	0.04728	0.08737
Factory orders	0.06571***	-0.3652**	-0.00722	0.10438**	-0.02243	0.23381**	0.02224**	0.03656	0.10924**	-0.16832*	-0.06361	-0.68095***
GDP	0.16121***	-0.91541***	0.11461***	-0.16196***	0.15722***	-0.29682**	0.04996***	-0.04091	0.26447***	-0.37431***	-0.06994	-0.2124
Housing starts	0.08035***	-0.40519**	0.08746***	-0.15567***	0.10646***	-0.32943***	0.0307***	-0.14564**	0.02419	0.06669	-0.05308	-0.30261
Industrial production	0.0652***	-0.56456***	0.0062	0.03609	0.03259	-0.11575	0.00655	-2e-04	0.0695	-0.16238*	-0.04995	-0.19915
New home sales	0.11635***	-0.51095***	0.07002***	-0.04171	0.06764***	-0.03879	0.04642***	0.04233	0.32761***	-0.53084***	-0.01708	-0.16199
Non-farm employment	0.41625***	-1.34407***	0.42629***	-0.49897***	0.5661***	-1.06553***	0.18526***	0.15465**	0.18194***	-0.01315	0.02026	-0.49134**
Pending home sales	0.14487***	-0.8662***	0.03822**	-0.08605*	-0.00309	0.1383	0.04684***	-0.03212	0.05059	-0.0823	-0.08788**	-0.70701***
Personal consumption	-0.02318	0.15519	0.05627***	-0.109*	0.09287***	-0.29668**	-0.00731	0.10063	0.14937**	-0.16345	-0.06411	-0.60997**
Personal income	-0.00477	0.16598	0.16396***	-0.34493***	0.2105***	-0.73824***	0.01295	-0.02388	0.16505***	-0.19673*	-0.09811**	-0.76453***
Producer price index	0.12583***	-0.51275***	0.04942***	-0.01475	0.14451***	-0.47612***	0.02331**	0.02659	0.2776***	-0.25324***	0.07495*	0.29216
Trade balance	0.08875***	-0.24	0.04125***	0.00637	0.02838	0.08788	0.01139	0.03537	0.01691	0.05017	-0.03151	-0.11329
Announcements specific to commodity markets												
Crude Oil Weekly inventory	0.0962***	0.15058									0.9177***	1.06866***
Natural Gas Weekly inventory												
Observations	495652	500857	492438	485244	315201	448530						
R ²	0.15738	0.084362	0.071708	0.064643	0.058782	0.161297						

This table presents estimates of eq. 10 using financialization variable NLS_t . The equation is $\sigma_t^2 = \alpha_0 + \alpha_1 \sigma_{t-1}^2 + \alpha_2 \epsilon_t^2 + \sum_{m=1}^{22} \Phi_m D_{m,t} + \beta X_{i,t} + \sum_{k=1}^n \phi_k I_{kt} + \sum_{h=1}^{23} \rho_h D_{h,t}$ where $I_{kt} = D_{m,t} \cdot X_{i,t}$ and $D_{m,t}$ is a macro announcement dummy variable for release m . The Φ_m coefficients capture the instantaneous change in the conditional variance when an announcement has just occurred. The ϕ_m coefficients capture the conditional variance when an announcement has just occurred in conjunction with the level of financialization.

Table 40: Announcement (macro & commodity-specific) and financialization (MM-NLS) effects on futures returns (Kurov) - ZLB Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m
Macroeconomic News Announcements												
Initial jobless claims	-0.61873***	3.79363***	0.82122***	-1.83823***	0.9461***	-3.51646***	-0.13481***	0.2624	-0.30845	0.89588*	-0.06368	0.28495
ADP Employment	1.44785***	-7.85026***	-2.63505***	6.5434***	-1.65861***	5.12131***	0.29183***	-0.98879	0.09768	-0.81895	0.66288**	0.35649
CB Consumer	0.23286***	-1.72586***	-0.02786*	0.03013	-0.03949*	0.20351	0.03721***	-0.1228	-0.10851*	0.19894*	0.06576**	0.22021
Advance retail sales	0.72061***	-5.2157***	-0.48559***	1.07889***	-0.40723***	1.59806***	0.04838*	-0.51979**	-0.1449	0.22726	0.10462*	0.03384
Building permit	0.00943	-0.03507	-0.01738	-0.04424	-0.03626*	-0.02107	-0.00067	-0.01652	0.00852	-0.09906	-0.03031	-0.14419
Construction spending	-0.01686	-0.07735	0.00554	-0.0168	0.03991	-0.13778	0.01419	-0.253***	0.09235	-0.15374	-0.04047	-0.07342
Consumer credit	-0.00935	0.00035	-0.02739**	0.10286**	-0.01537	0.18194***	0.00156	0.05545	0.05113	-0.09891	0.02655	0.14118
Consumer price index	0.00068	-0.148	-0.04091**	0.12628	-0.0445*	0.12259	0.00586	-0.31484***	0.00768	-0.09833	0.03047	0.18925
Durable goods orders	0.20737***	-1.59397***	-0.08826***	0.32878***	-0.06089***	0.45767***	0.0581***	-0.04901	0.0729	-0.06165	0.00919	-0.30145
Existing home sales	0.09446**	-0.43011	-0.07796***	0.23737***	-0.04781	0.30091	0.05891***	-0.13818	-0.05208	0.10284	0.00204	-0.03008
Factory orders	-0.05469	0.45466	-0.05182*	0.10148	-0.0753**	0.27928	0.00053	-0.02256	0.02337	-0.07138	0.02626	0.38077
GDP	0.09203**	-0.51635**	-0.1617***	0.24657**	-0.25379***	0.84989***	0.02338*	0.24025**	-0.23846***	0.38337**	0.01852	-0.117
Housing starts	0.10174**	-0.67073**	-0.08595***	0.07723	-0.12082***	0.23702	0.02456**	-0.00819	-0.06445	0.10574	-0.01387	-0.26555
Industrial production	0.13054**	-0.83082*	-0.03781	0.08352	-0.05807*	0.16764	0.01605	-0.17091	-0.15723**	0.27747*	0.03047	0.02433
New home sales	0.11875**	-0.61516	-0.16013***	0.41718***	-0.08742***	0.26801	0.07452***	-0.01334	-0.13515	0.25862	0.02251	-0.06486
Non-farm employment	8.42886***	-45.72262***	-7.18381***	15.6598***	-5.9562***	24.71473***	1.55073***	-2.37769**	-0.02971	0.41305	0.48504	-11.46876***
Pending home sales	0.23739***	-1.67951***	0.01256	-0.06539	-0.00922	0.078	0.0393***	-0.06399	-0.1564*	0.32581*	-0.00562	-0.42268
Personal consumption	-0.01615	0.35868	-0.06144*	0.19471*	0.02187	-0.1603	0.0097	0.19646	-0.08276	0.13089	-0.02085	-0.11183
Personal income	-0.12451	1.0659	0.07096	-0.31886	-0.21668	1.21137	0.02078	-0.32997	-0.38298	0.75093	-0.29178**	-3.32571***
Producer price index	0.1211***	-0.87303***	-0.05265***	0.13217**	-0.04707*	0.21052	0.01299	-0.11666	0.09948*	-0.16284	-0.03937	-0.19326
Trade balance	-0.02921	0.14179	-0.02691	0.0261	-0.02325	0.10813	-0.01952	0.11285	0.08551	-0.16591	0.02784	0.06101
Announcements specific to commodity markets												
Crude Oil Weekly inventory	-0.14249***	-0.10192										
Natural Gas Weekly inventory												
Observations	495652		500857		492438		485244		315201		448530	
R ²	0.002881		0.003122		0.001578		0.000642		0.000452		0.001913	

This table presents estimates of eq. 6, $R_t^{i+\tau} = \alpha + \sum_{m=1}^{22} \gamma_m S_{m,t} + \delta X_{t,i} + \sum_{m=1}^{22} \theta_m (S_{m,t} \cdot X_t) + \beta R_{t-\tau}^i + \epsilon_t$ using the method proposed by Kurov et al. (2019) and financialization variable $MM_N L S_t$. The γ_m coefficients capture the instantaneous change in return when an announcement has just occurred and especially if that announcement was unanticipated. The coefficients θ_m capture the instantaneous change in return when an announcement has just occurred in conjunction with the level of financialization.

Table 41: Announcement (macro & commodity-specific) and financialization (SWAP-NLS) effects on futures returns (Kurov) - ZLB Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m
Announcements	Macroeconomic News Announcements											
Initial jobless claims	-0.32056***	-1.72794***	0.38264***	0.42661	0.40779***	1.27055	0.13737	-0.87888	0.14847**	0.45145	-0.0701	-0.1039
ADP Employment	0.69846***	3.71649***	-0.85488***	-1.58718	-0.853***	0.48351	-0.99839	4.17881*	0.16141	1.79936*	0.90271*	-1.93898
CB Consumer	0.10301***	0.87977***	-0.01011	0.10979	-0.01216	-0.10324	-0.14402*	0.57572**	-0.02866*	-0.14917	0.11438	-0.43482
Advance retail sales	0.24843***	1.51216***	-0.28012***	-0.97235***	-0.13895***	-0.56864	-0.63271***	2.12932***	-0.07521**	-0.39294	0.46335***	-2.78721***
Building permit	0.02936	0.18263	-0.02238**	0.03441	-0.03317**	0.25235	-0.22253***	0.75451***	-0.03283***	0.00983	0.01802	-0.28407
Construction spending	0.00556	0.30199**	0.01642	0.13233	0.0163	0.12278	-0.29005***	0.96048***	0.03267	0.13762	-0.01452	-0.12698
Consumer credit	-0.00969	-0.01432	-0.00832	-0.07044	0.01001	-0.1192	0.02716	-0.07626	0.00857	0.07192	0.04016	-0.17524
Consumer price index	-0.0476***	-0.23974**	0.02015	0.31684	-0.01748	-0.44052*	-0.11054	0.39	-0.03451**	0.05952	0.05187	-0.23282
Durable goods orders	0.11917***	0.59693***	-0.05002***	-0.26004***	0.00327	0.25498*	0.08716**	-0.20937*	0.0913***	0.25771***	0.00296	0.12176
Existing home sales	0.0546***	0.01145	-0.02656	-0.13171	-0.00135	0.15546	-0.07654	0.40998*	-0.01008	-0.08721	0.15042*	-0.85454*
Factory orders	-0.00835	-0.14771	-0.04126*	-0.14039	-0.02815*	-0.11486	-0.06044	0.19988	-0.01459	-0.03536	0.07999	-0.5316
GDP	0.06167***	0.3174***	-0.04749**	0.37778***	-0.14238***	-0.34776*	-0.03946	0.23063	-0.07962***	-0.16292	-0.03689	0.44542
Housing starts	0.09313***	0.48485**	-0.09264***	-0.16993	-0.09609***	-0.25287	-0.0246	0.15814	-0.03424**	-0.19375**	-0.01233	0.00095
Industrial production	0.07388***	0.42044**	0.00084	0.14587	-0.03551*	0.23188	-0.00288	0.0343	-0.03194	-0.07516	0.07229	-0.2827
New home sales	0.09002***	0.44011***	-0.03834	0.11355	-0.04672*	0.06064	0.01671	0.17876	-0.00305	0.01911	0.09846	-0.50693
Non-farm employment	3.88185***	13.80768***	-4.82381***	-15.84916***	-2.103***	-8.70416**	-0.61228	6.83749***	0.3563	2.6998	0.22581	5.96351
Pending home sales	0.05149***	0.45606***	0.00041	0.05162	0.01186	-0.51632**	-0.00387	0.12369	-0.00455	-0.07283	0.08726	-0.27124
Personal consumption	0.03372	-0.02065	0.00836	0.12445	0.00736	0.54898*	0.1011	-0.27521	-0.0175	-0.00691	-0.05347	0.27416
Personal income	-0.05994	-0.50016	-0.02996	-0.1618	0.0143	-2.79718**	-0.10297	0.411	-0.05688	-0.65726	-0.46663	3.32969
Producer price index	0.02268*	0.11458	-0.0054	0.08145	-0.01398	-0.34543**	-0.0017	0.03633	0.01875	-0.08175	-0.06659	0.3003
Trade balance	-0.02017	-0.09883	-0.00403	0.14655	-0.00768	-0.21584	-0.06485	0.18213	0.01558	0.10698	0.01481	0.04146
Announcements specific to commodity markets												
Crude Oil Weekly inventory	-0.25063***	-0.60613***									-1.20271***	3.39611***
Natural Gas Weekly inventory												
Observations	495652		500857		492438		485244		315201		448530	
R ²	0.002955		0.002525		0.001046		0.000681		0.000478		0.002085	

This table presents estimates of eq. 6, $R_t^{i+\tau} = \alpha + \sum_{m=1}^{22} \gamma_m S_{m,t} + \delta X_{t,i} + \sum_{m=1}^{22} \theta_m (S_{m,t} \cdot X_t) + \beta R_{t-\tau}^i + \epsilon_t$ using the method proposed by Kurov et al. (2019) and financialization variable $SWAP_{NLS,t}$. The γ_m coefficients capture the instantaneous change in return when an announcement has just occurred and especially if that announcement was unanticipated. The coefficients θ_m capture the instantaneous change in return when an announcement has just occurred in conjunction with the level of financialization.

Table 42: Announcement (macro & commodity-specific) and financialization (MM-NLS) effects on futures conditional variance - ZLB Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m
Macroeconomic News Announcements												
Initial jobless claims	0.11042***	-0.51631***	0.05263***	-0.00595	0.08731***	-0.12781**	0.03485***	-0.06463*	0.17234***	-0.20324***	-0.02869***	-0.13137
ADP Employment	0.06053**	-0.52779**	0.07769***	-0.17422***	0.06459***	-0.31473***	0.03757***	-0.03711	0.00838	0.00886	0.01206	-0.00492
CB Consumer	0.20124***	-1.3458***	0.05019***	-0.06305	0.05986***	0.02708	0.05096***	-0.132*	0.09902**	-0.14213	-0.00238	-0.01103
Advance retail sales	0.20892***	-1.16165***	0.12186***	-0.22994***	0.12102***	-0.28523**	0.06519***	-0.25509***	0.06152	-4e-05	-0.00614	-0.23023
Building permit	0.10335***	-0.6773**	0.08754***	-0.16183***	0.10387***	-0.38658***	0.0323***	-0.08438	0.05805	5e-04	-0.01453	-0.22983
Construction spending	0.30662***	-2.0092***	0.10043***	-0.17977***	0.09162***	-0.24762**	0.07129***	-0.15578**	0.03585	0.0262	0.01936	-0.11956
Consumer credit	0.06781**	-0.45377*	0.01954	-0.04524	0.02045	-0.00112	0.00041	0.13979**	-0.07108	0.14854	0.00592	0.03352
Consumer price index	0.03264	-0.30328	0.10382***	-0.19722***	0.09979***	-0.21962	0.01185	-0.02195	0.02337	0.03283	-0.02505	-0.27462
Durable goods orders	0.16495***	-0.98185***	0.05274***	-0.02911	0.03975**	0.19593	0.03304***	-0.11622	0.11101**	-0.0775	0.02164	0.07533
Existing home sales	0.06024**	-0.37169	0.06853***	-0.09569**	0.07145***	-0.09328	0.03615***	-0.1979***	0.02413	-0.0428	0.03945*	0.08293
Factory orders	0.08018***	-0.53355**	0.00713	0.07431	-0.00389	0.18423	0.02073**	0.01816	0.10843**	-0.18796*	0.00491	-0.51457***
GDP	0.19148***	-1.31834***	0.08641***	-0.09203*	0.13755***	-0.23199*	0.05266***	-0.04615	0.24948***	-0.39107***	-0.04221*	-0.10882
Housing starts	0.07005**	-0.38038	0.05814***	-0.07651	0.07579***	-0.22709*	0.03668***	-0.11181	0.04081	0.0384	-0.01655	-0.17388
Industrial production	0.07962**	-0.78674***	0.01453	0.01179	0.04212**	-0.22839*	0.00789	-0.0558	0.07086	-0.18734*	-0.04399**	-0.34835**
New home sales	0.13***	-0.72125***	0.05974***	-0.01109	0.06094***	-0.00298	0.04619***	-0.06623	0.27489***	-0.48294***	-0.00206	-0.15513
Non-farm employment	0.41187***	-1.49559***	0.38777***	-0.47071***	0.46246***	-0.70966***	0.1787***	0.07823	0.13212***	0.09361	0.07222***	-0.36383**
Pending home sales	0.16519***	-1.17845***	0.02729**	-0.0649	-0.00125	0.17222	0.0491***	-0.05658	0.04843	-0.08794	-0.02888	-0.72767***
Personal consumption	0.00594	-0.09037	0.06558***	-0.17108***	0.07976***	-0.31621**	-0.01151	0.07871	0.16883***	-0.22576*	0.01929	-0.26873
Personal income	0.0335	-0.15354	0.15047***	-0.37937***	0.17321***	-0.73187***	0.01627*	-0.11945	0.17525***	-0.2426**	-0.00037	-0.36836**
Producer price index	0.17157***	-1.00764***	0.07182***	-0.10851**	0.12842***	-0.53013***	0.0216**	0.04167	0.28218***	-0.29799***	0.03465	0.10017
Trade balance	0.11056***	-0.48706**	0.06293***	-0.08213*	0.038**	0.04965	0.01111	-0.02654	0.02059	0.04861	-0.02653	-0.17166
Announcements specific to commodity markets												
Crude Oil Weekly inventory	0.10301***	0.10001									0.80936***	0.99041***
Natural Gas Weekly inventory												
Observations	495652	0.16859	500857	492438	485244	0.072993	315201	448530	0.05873	0.162315		
R ²			0.085873	0.071917								

This table presents estimates of eq. 10 using financialization variable $MM_N L S_t$. The equation is $\sigma_t^2 = \alpha_0 + \alpha_1 \sigma_{t-1}^2 + \alpha_2 \epsilon_t^2 + \sum_{m=1}^{22} \Phi_m D_{m,t} + \beta X_{i,t} + \sum_{k=1}^n \phi_k I_{kt} + \sum_{h=1}^{23} \rho_h D_{h,t}$ where $I_{kt} = D_{m,t} \cdot X_{i,t}$ and $D_{m,t}$ is a macro announcement dummy variable for release m . The Φ_m coefficients capture the instantaneous change in the conditional variance when an announcement has just occurred. The ϕ_m coefficients capture the conditional variance when an announcement has just occurred in conjunction with the level of financialization.

Table 43: Announcement (macro & commodity-specific) and financialization (SWAP-NLS) effects on futures conditional variance - ZLB Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m
Macroeconomic News Announcements												
Initial jobless claims	0.06549***	0.23925***	0.03655***	-0.12678***	0.06619***	0.167**	-0.08182***	0.37478***	0.09328***	0.229***	0.00441	-0.14759
ADP Employment	0.01409	0.23268***	0.05449***	0.17291**	0.01648	0.17252	-0.09995**	0.43807***	0.00677	-0.08376	0.0172	-0.03058
CB Consumer	0.07658***	0.4458***	0.0511***	0.14388*	0.06286***	0.03792	-0.11184**	0.53857***	0.03987***	0.1067	0.01192	-0.0844
Advance retail sales	0.10253***	0.4136***	0.06959***	0.03131	0.07934***	0.12412	-0.16067***	0.71939***	0.06466***	0.05069	0.00636	0.0367
Building permit	0.04852***	0.34467***	0.05713***	0.07698	0.04958***	0.14126	-0.16538***	0.65673***	0.05851***	0.00501	-0.01757	0.12566
Construction spending	0.11014***	0.54991***	0.09045***	0.30367***	0.04787***	0.38803***	-0.17841***	0.78982***	0.0554***	0.1119	0.16948***	-0.89328***
Consumer credit	0.02295**	0.10146	0.02228**	0.118	0.02205**	-0.07699	0.09392*	-0.2947*	-0.01962	-0.24147*	0.0139	-0.06912
Consumer price index	0.00803	0.17941	0.06524***	0.10223	0.0807***	-0.35766*	-0.05375	0.21154	0.03108*	-0.11694	0.01028	-0.08624
Durable goods orders	0.07999***	0.42086***	0.03571***	-0.08651	0.06175***	0.14099	-0.00805	0.12492	0.08454***	0.14655	0.0136	0.01322
Existing home sales	0.01941*	0.00449	0.06046***	0.13692*	0.0595***	-0.05527	-0.09607**	0.42236***	0.00571	0.02091	0.09926**	-0.42834
Factory orders	0.03087***	0.21435**	0.03428***	0.06602	0.0256**	-0.14294	-0.11869***	0.45413***	0.04081***	0.31705***	-0.04324	0.5969**
GDP	0.06672**	0.47858***	0.04323**	-0.16305*	0.09343***	0.38106***	-0.00081	0.16193	0.09609***	0.4349***	-0.02224	-0.0661
Housing starts	0.0434***	0.28794***	0.0351***	-0.03896	0.04387***	0.05641	-0.12478***	0.53005**	0.05811***	-0.00276	-0.03612	0.21804
Industrial production	0.01151	0.33085***	0.02356**	0.05644	0.00956	0.08248	0.02927	-0.07343	-0.00602	0.11675	0.00339	-0.13793
New home sales	0.06516***	0.30707***	0.09172***	0.30519***	0.05405***	0.28987**	0.00163	0.14223	0.08315***	0.44694***	0.00018	0.06456
Non-farm employment	0.28112***	0.64937***	0.27301***	0.02822	0.32165***	2.05556***	0.10034**	0.25963**	0.20289***	0.43864***	0.13651***	-0.2385
Pending home sales	0.05843***	0.46806***	0.03808***	0.22974***	0.02312**	0.01365	-0.15574***	0.65543***	0.01164	0.0586	0.0324	-0.01779
Personal consumption	-0.00771	-0.05499	0.06986***	0.4015***	0.02991**	0.30442*	0.02375	-0.11179	0.08672***	0.33367***	-0.0348	0.49927*
Personal income	0.01155	-0.0877	0.15783***	0.89515***	0.05059***	0.66424***	0.09887*	-0.27659*	0.07954***	0.29818**	-0.09135*	0.7902***
Producer price index	0.07622***	0.29168***	0.05587***	0.10034	0.04884***	0.2141	-0.02427	0.15638	0.16635***	0.31874***	0.12565***	-0.65777**
Trade balance	0.06486***	0.08942	0.00256	-0.36379***	0.05518***	-0.56239***	-0.01684	0.0922	0.04085***	-0.03389	-0.02124	0.04951
Announcements specific to commodity markets												
Crude Oil Weekly inventory	0.27209***	1.11802***									0.91556***	-1.06191***
Natural Gas Weekly inventory											448530	
Observations	495652	500857	492438	485244	315201	0.06056	0.15983					
R ²	0.164857	0.084522	0.08036	0.081774								

This table presents estimates of eq. 10 using financialization variable $SWAP_NLS_t$. The equation is $\sigma_t^2 = \alpha_0 + \alpha_1 \sigma_{t-1}^2 + \sum_{m=1}^{22} \Phi_m D_{m,t} + \beta X_{i,t} + \sum_{k=1}^n \phi_k I_{kt} + \sum_{h=1}^{23} \rho_h D_h$ where $I_{kt} = D_{m,t} \cdot X_{i,t}$ and $D_{m,t}$ is a macro announcement dummy variable for release m . The Φ_m coefficients capture the instantaneous change in the conditional variance when an announcement has just occurred. The ϕ_m coefficients capture the conditional variance when an announcement has just occurred in conjunction with the level of financialization.

Table 44: Announcement (macro & commodity-specific) and financialization (MSCT) effects on futures returns (Kurov) - ZLB Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m
Macroeconomic News Announcements												
Initial jobless claims	-1.71973***	9.28344***	-0.91441***	4.21497***	-1.02425***	6.79495***	-0.39482*	0.93032	1.31696**	-2.84719**	-0.2349	0.56685
ADP Employment	8.07066***	-44.88752***	3.17561***	-13.24287***	2.52752***	-16.12411***	2.64996***	-8.36139***	1.58765	-4.45632	3.161***	-10.37936**
CB Consumer	0.17654	-0.74454	-0.00956	-0.035	0.11414*	-0.55998*	0.15241**	-0.37292**	0.0886	-0.25073	0.10174	-0.19806
Advance retail sales	0.1058	0.48659	0.50046***	-2.24716***	0.39276**	-2.54387***	0.69355***	-2.1373***	-0.06239	0.04124	0.87691***	-3.00086***
Building permit	-0.09	0.53675	-0.0325	0.02426	0.01462	-0.20638	0.1468**	-0.43595**	0.01669	-0.10879	0.06545	-0.28127
Construction spending	-0.0012	-0.14224	-0.07115	0.23705	0.04104	-0.1055	-0.12168*	0.39471*	-0.08547	0.24123	-0.17037	0.47716
Consumer credit	-0.08654	0.45807	0.03694	-0.13068	0.09489**	-0.37016**	0.12201**	-0.38111**	0.12631	-0.2911	-0.02814	0.15615
Consumer price index	0.04337	-0.34602	-0.0316	0.0577	-0.03607	0.03117	-0.02764	0.12674	-0.20791	0.394	0.00426	0.05715
Durable goods orders	0.54914***	-3.12777***	0.22266***	-0.76274***	0.21322***	-0.90494***	0.38391***	-1.14466***	0.33132**	-0.6961*	0.0988	-0.26276
Existing home sales	0.24675*	-1.07121	0.37124***	-1.3363***	0.26191**	-1.25529**	0.09843*	-0.18226	0.19025	-0.46693	0.14329	-0.52618
Factory orders	-0.07414	0.42715	-0.01306	-0.03367	0.03423	-0.30014	-0.06355	0.21434	0.04709	-0.1386	-0.04909	0.17753
GDP	-0.02686	0.25162	0.11664	-0.7099**	-0.0411	-0.44891	0.13149*	-0.29654	0.11842	-0.42688	0.2227**	-0.67233*
Housing starts	0.14917	-0.77103	0.05149	-0.39192	-0.09145	-0.00807	0.34113***	-0.97498***	-0.33029***	0.73007***	0.17745*	-0.62051*
Industrial production	0.11601	-0.5159	0.04066	-0.19206	0.00719	-0.1764	0.09965	-0.29628	0.06819	-0.21688	0.03917	-0.03547
New home sales	0.3107	-1.47859	0.28545**	-1.13583***	0.16778	-0.8966*	0.37966***	-0.98329***	0.24311	-0.58978	0.03243	-0.02457
Non-farm employment	9.79004***	-40.97038***	-1.82124	-3.45392	2.99347**	-23.23717***	7.71578***	-20.18605***	7.72731***	-18.23266***	5.83291***	-16.87916***
Pending home sales	0.54179***	-2.90363***	-0.12564	0.42013	-0.00597	0.05032	-0.04734	0.27994	0.28184	-0.67743	0.21718	-0.70562
Personal consumption	-0.52742***	3.1126***	0.39776***	-1.37757***	0.03387	-0.13776	0.01056	0.0228	-0.02271	0.00932	0.016	-0.11051
Personal income	0.42185	-2.59771	0.20766	-0.75782	0.08973	-0.58179	-0.54035*	1.89537**	-0.93786	2.23746	0.9588	-3.7023
Producer price index	0.08176	-0.34513	-0.06844	0.1759	-0.0574	0.18991	0.08301	-0.23833	0.20086	-0.40838	-0.06531	0.1586
Trade balance	0.46086***	-2.72338***	0.11542*	-0.46495**	0.13136	-0.64057*	0.03607	-0.15274	0.12132	-0.28636	0.00194	0.06937
Announcements specific to commodity markets												
Crude Oil Weekly inventory	0.13938***	-1.68554***										
Natural Gas Weekly inventory												
Observations	495652		500857		492438		485244		315201		448530	
R ²	0.002665		0.002578		0.001292		0.000896		0.000483		0.001888	

This table presents estimates of eq. 6, $R_t^{t+\tau} = \alpha + \sum_{m=1}^{22} \gamma_m S_{m,t} + \delta X_{t,t} + \sum_{m=1}^{22} \theta_m (S_{m,t} \cdot X_t) + \beta R_{t-\tau}^t + \epsilon_t$ using the method proposed by Kurov et al. (2019) and financialization variable $MSCT_t$. The γ_m coefficients capture the instantaneous change in return when an announcement has just occurred and especially if that announcement was unanticipated. The coefficients θ_m capture the instantaneous change in return when an announcement has just occurred in conjunction with the level of financialization.

Table 45: Announcement (macro & commodity-specific) and financialization (WT) effects on futures returns (Kurov) - ZLB Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m
Macroeconomic News Announcements												
Initial jobless claims	3.39462**	-3.23512**	-3.01503***	2.97992***	-5.49073***	5.28711***	-0.68199	0.44501	0.62226	-0.43444	-0.32713	0.18921
ADP Employment	-1.16392	1.55706	11.49566***	-11.00441***	10.42548***	-10.10442***	5.76404***	-4.4542***	-0.72646	0.38707	3.93156*	-2.66921
CB Consumer	-1.1706**	1.0929**	0.02322	-0.03801	0.39487**	-0.35516**	0.28444*	-0.19318	0.15792	-0.14776	0.15098	-0.0805
Advance retail sales	-5.42646***	5.02585***	1.65831***	-1.6416***	2.84821***	-2.69891***	1.7175***	-1.32075***	0.15097	-0.16248	1.02456*	-0.71632
Building permit	-0.34808	0.32212	-0.07719	0.04263	0.02222	-0.05114	0.25677*	-0.19469*	-0.00723	-0.02101	0.12863	-0.10986
Construction spending	-0.89333	0.78745	-0.12876	0.11443	-0.06766	0.07651	-0.03553	0.02725	-0.20575	0.19331	-0.23647	0.15277
Consumer credit	-0.20981	0.18129	0.1046	-0.09394	0.24744***	-0.20575**	0.27121**	-0.20762**	-0.01881	0.0221	-0.08457	0.07584
Consumer price index	0.45303	-0.42962	0.05867	-0.06169	0.12832	-0.1382	0.09522	-0.06727	-0.26433*	0.1953	-0.09185	0.08488
Durable goods orders	-1.55968***	1.44626***	0.58268***	-0.51978***	0.80566***	-0.69869***	0.73704***	-0.5479***	-0.01431	0.04921	0.32456*	-0.22437*
Existing home sales	0.12058	-0.05681	0.60687**	-0.55669***	0.75062***	-0.6795***	-0.01487	0.0527	0.15269	-0.13553	0.15689	-0.12032
Factory orders	-0.08006	0.07173	0.01812	-0.03731	0.02948	-0.05441	-0.09798	0.0784	0.05428	-0.05723	-0.15227	0.11768
GDP	-1.10365**	1.02841**	0.34139**	-0.38562***	0.60805***	-0.66148***	0.17439	-0.10685	0.47806**	-0.47129**	0.40391**	-0.27781**
Housing starts	-0.70147*	0.65898*	0.09934	-0.14474	0.11688	-0.18042	0.56837***	-0.41422***	-0.14328	0.10955	0.50539**	-0.37037**
Industrial production	-1.21214*	1.12939*	0.08607	-0.09045	0.18116	-0.18889	0.08563	-0.06099	0.14239	-0.14204	0.0357	-0.00631
New home sales	-0.43644	0.4349	0.62834***	-0.59747***	0.45064	-0.4375*	0.93247***	-0.66244***	0.29874	-0.26655	-0.0343	0.04349
Non-farm employment	-39.68668***	38.39415***	20.49453***	-20.83639***	34.82862***	-32.87117***	18.45511***	-13.27375***	5.74779**	-4.85405**	14.49872***	-10.16519***
Pending home sales	-1.2668**	1.17107**	-0.13796	0.11965	0.12077	-0.10575	-0.29999**	0.26192**	0.39471*	-0.34479*	0.29354	-0.20447
Personal consumption	-0.5167	0.50004	0.44707***	-0.40643***	-0.03112	0.02735	-0.06617	0.0646	-0.08671	0.06045	0.02373	-0.02962
Personal income	1.90403	-1.73721	-0.02353	0.0091	1.20802	-1.1314	-0.77454	0.62039	0.52308	-0.43791	2.86821**	-2.24368**
Producer price index	-0.82775**	0.76535**	0.12283	-0.12248	0.13944	-0.13689	0.12555	-0.09122	0.13515	-0.09263	0.04446	-0.05139
Trade balance	0.5433**	-0.50659**	0.14784**	-0.15094**	0.24934	-0.22783*	0.08049	-0.07268	-0.06368	0.05708	-0.07667	0.07719
Announcements specific to commodity markets												
Crude Oil Weekly inventory	1.08679***	-1.14084***									0.31446	-0.71889***
Natural Gas Weekly inventory												
Observations	495652		500857		492438		485244		315201		448530	
R ²	0.002703		0.003152		0.001692		0.000841		0.000436		0.001957	

This table presents estimates of eq. 6, $R_t^{t+\tau} = \alpha + \sum_{m=1}^{22} \gamma_m S_{m,t} + \delta X_{t,j} + \sum_{m=1}^{22} \theta_m (S_{m,t} \cdot X_t) + \beta R_{t-\tau}^t + \epsilon_t$ using the method proposed by Kurov et al. (2019) and financialization variable WT_t . The γ_m coefficients capture the instantaneous change in return when an announcement has just occurred and especially if that announcement was unanticipated. The coefficients θ_m capture the instantaneous change in return when an announcement has just occurred in conjunction with the level of financialization.

Table 46: Announcement (macro & commodity-specific) and financialization (PCA) effects on futures returns (Kurov) - ZLB Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m
Macroeconomic News Announcements												
Initial jobless claims	-0.1354***	0.03145	0.38937***	-2.2018**	0.52935***	-1.69862***	-0.11665***	-0.93702***	0.10728**	0.09333	-0.07764	0.02027
ADP Employment	0.40401***	-0.34661**	-1.04667***	0.17884***	-1.09465***	0.30735***	0.18981	0.02337	-0.27832**	-0.04634	0.35566*	-0.30378*
CB Consumer	0.04738***	0.01175	-0.02012**	-0.62504***	-0.00886	0.04047***	0.04047***	-0.21153**	-0.01632	0.00898	0.04587**	-0.00829
Advance retail sales	0.19924***	0.13052***	-0.21536***	-0.00301	-0.21829***	-0.02132**	0.06358**	-0.01148	-0.04149	-0.0147	0.07127	-0.08261**
Building permit	0.00876	0.01262	-0.02796***	-0.09826***	-0.03448*	-0.14706***	0.01076	-0.06447***	-0.03238***	-0.01135	-0.01339	-0.01139
Construction spending	-0.0169	0.01949	0.00174	0.00232	0.01964	-0.00415	-0.00216	-0.01157	0.0219	-0.00176	-0.03652	0.01486
Consumer credit	-0.00477	0.01247	-0.00297	0.00767	0.01331	0.00498	0.00779	0.02053**	0.00688	0.01732	0.01528	0.00689
Consumer price index	-0.02604*	-0.01915	-0.00121	-0.00595*	-0.02882*	-0.01229***	0.00962	-0.01451**	-0.03467**	0.00074	0.01985	0.00602
Durable goods orders	0.01955*	0.0084	-0.00926	-0.00451	0.01189	-0.00811	0.04012***	0.00826	0.04348***	0.01607	0.02851*	-0.01551
Existing home sales	0.05956***	-0.00741	-0.03056***	-0.02765***	-0.02193	-0.03688***	0.052***	-0.04313***	-0.00767	0.00402	-0.00295	-0.01494
Factory orders	0.00032	0.00381	-0.02526***	-0.0339***	-0.03445**	-0.0375***	0.00079	0.00265	-0.01269	-0.01291	0.00259	0.01178
GDP	0.03011**	0.03081**	-0.09874***	-0.00417	-0.14231***	-0.00916	0.04758***	0.00699	-0.0766***	-0.00398	0.03823*	-0.02532**
Housing starts	0.01897	0.00464	-0.0646***	-0.02261***	-0.08712***	-0.036***	0.04787***	-0.01312	-0.0146	-0.03896**	0.01486	-0.03128**
Industrial production	0.03864*	0.02468	-0.01743*	-0.01087*	-0.03365*	-0.01217	0.00807	-0.03854***	-0.02556	0.01029	0.02772	-0.00121
New home sales	0.04508**	0.00345	-0.05411***	0.00318	-0.04529**	0.00117	0.08631***	0.00136	-0.01694	0.00085	0.02382	0.00223
Non-farm employment	2.88465***	0.58559***	-3.26273***	-0.03767***	-2.54446***	-0.02702**	1.63634***	-0.03802***	0.00194	-0.0264	1.13985***	-0.86544***
Pending home sales	0.03575**	0.00827	-0.00068	-0.00068	0.00061	-1.77992***	0.03715***	-0.72042***	-0.01184	-0.06442**	0.02185	-0.02241
Personal consumption	0.05077***	0.06441**	-0.01743	0.00769	0.00016	-0.00554	0.01817	0.01877**	-0.0169	-0.0308*	-0.01447	-0.00431
Personal income	-0.05408	-0.07328	-0.01315	-0.02674***	-0.07365	0.00118	0.02456	-0.00143	0.00748	0.00283	-0.07876	-0.18097**
Producer price index	0.02545**	0.01051	-0.01703**	-2e-04	-0.01533	-0.05688	0.00989	0.07844**	0.02613**	-0.03985	-0.02221	-0.00095
Trade balance	-0.02379	-0.03072***	-0.02416**	-0.0075	-0.00933	-0.00533	-0.01005	-0.00455	0.00269	-0.00794	0.02307	0.00533
Announcements specific to commodity markets												
Crude Oil Weekly inventory	-0.18216***	-0.04537***									-0.01427	0.00311
Natural Gas Weekly inventory											448530	
Observations	495652	500857	500857	492438	485244	315201	0.000838	0.000442				
R ²	0.00258	0.003119	0.001676									0.000339

This table presents estimates of eq. 6, $R_t^{t+\tau} = \alpha + \sum_{m=1}^{22} \gamma_m S_{m,t} + \delta X_{t,j} + \sum_{m=1}^{22} \theta_m (S_{m,t} \cdot X_t) + \beta R_{t-\tau}^t + \epsilon_t$ using the method proposed by Kurov et al. (2019) and financialization variable PCA_t . The γ_m coefficients capture the instantaneous change in return when an announcement has just occurred and especially if that announcement was unanticipated. The coefficients θ_m capture the instantaneous change in return when an announcement has just occurred in conjunction with the level of financialization.

Table 47: Announcement (macro & commodity-specific) and financialization (MSCT) effects on futures conditional variance - ZLB Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m
Macroeconomic News Announcements												
Initial jobless claims	0.00067	0.29644	0.09626***	-0.15008*	0.08817***	-0.08424	0.10213***	-0.23246***	-0.0447	0.28893**	0.07561**	-0.33789**
ADP Employment	0.01387	-0.07365	-0.15567***	0.62969***	-0.08278	0.45713**	0.12931***	-0.3071**	-0.07343	0.19972	0.12453	-0.40146
CB Consumer	0.28985***	-1.33132**	-0.07	0.3489**	0.11241**	-0.21997	0.13335***	-0.28441**	0.03373	0.00098	0.0434	-0.15996
Advance retail sales	0.19026**	-0.61925	-0.18835***	0.84268***	-0.00694	0.39169*	0.12864***	-0.2331	0.00045	0.14264	0.09667	-0.30361
Building permit	-0.00919	0.20486	-0.08105	0.43175***	0.00546	0.20854	0.07911*	-0.16034	0.01921	0.09217	0.09476	-0.33514
Construction spending	0.15443	-0.40957	-0.07308	0.42442***	0.11616**	-0.25802	0.26934***	-0.66648***	0.17296	-0.29346	0.16002**	-0.46706*
Consumer credit	-0.00445	0.12246	-0.048	0.18621	-0.01358	0.15256	-0.02371	0.09285	0.0593	-0.14238	0.00099	0.0092
Consumer price index	0.07933	-0.44419	-0.01333	0.2292	-0.34667***	1.95161***	0.0601	-0.17856	-0.09213	0.30629	0.0897	-0.34899
Durable goods orders	-0.14213	1.13315**	-0.11035**	0.52408***	-0.06373	0.58762**	0.12156***	-0.3088**	-0.10461	0.42743	0.04751	-0.1165
Existing home sales	-0.12486	0.81827	-0.14073***	0.62128***	-0.04321	0.45926*	0.18972***	-0.54089***	0.09354	-0.21046	0.21703***	-0.66879**
Factory orders	-0.02855	0.29295	-0.01168	0.12795	0.02942	-0.03306	0.12413***	-0.3511***	0.06304	-0.09926	0.0685	-0.08354
GDP	-0.16888*	1.21032**	-0.09307*	0.52215***	0.04008	0.26304	0.14369***	-0.31879**	-0.24089	0.71818*	0.01008	-0.15367
Housing starts	-0.00598	0.19843	-0.07328	0.37481**	0.02053	0.10681	0.04997	-0.05186	0.00132	0.13335	0.05583	-0.21434
Industrial production	0.09111	-0.54971	-0.04187	0.19651	-0.0354	0.20862	0.02111	-0.0503	-0.18831	0.40637	0.19983**	-0.7836***
New home sales	-0.08739	0.77029	0.06138	-0.01481	0.06926	-0.04026	0.16927***	-0.41686***	-0.37801***	1.02545***	0.15444**	-0.52217*
Non-farm employment	0.27952***	-0.16761	-0.0595*	1.10012***	0.23734***	0.55864***	0.38509***	-0.68856***	0.20857**	-0.07884	0.28453***	-0.67399***
Pending home sales	-0.02266	0.30678	0.08713*	-0.25361	0.12748**	-0.46099**	0.19617***	-0.49191***	0.07595	-0.16014	0.46561***	-1.5594***
Personal consumption	-0.29782***	1.63841***	0.02332	-0.01085	0.10181*	-0.3078	0.07088	-0.27738*	0.09707	-0.08047	0.05828	-0.04285
Personal income	-0.25545**	1.52877**	0.04322	0.03061	0.06496	0.00396	0.00349	0.03366	-0.02381	0.19923	0.06088	-0.10842
Producer price index	0.096	-0.17986	0.00802	0.12227	-0.04859	0.45434*	0.10659**	-0.28362**	-0.05341	0.46894	0.1838**	-0.56959**
Trade balance	0.23401***	-1.00185***	-0.04929	0.30876***	0.02721	0.07844	0.04018	-0.09738	-0.12106	0.38251	0.10175	-0.41902*
Announcements specific to commodity markets												
Crude Oil Weekly inventory	-0.52797***	3.5487***									1.19046***	-1.46609***
Natural Gas Weekly inventory												
Observations	495652	0.130978	500857	0.083053	492438	0.08038	485244	0.078504	315201	0.056402	448530	0.162665
R ²												

This table presents estimates of eq. 10 using financialization variable $MSCT_t$. The equation is $\sigma_t^2 = \alpha_0 + \alpha_1 \sigma_{t-1}^2 + \alpha_2 \epsilon_t^2 + \sum_{m=1}^{22} \Phi_m D_{m,t} + \beta X_{i,t} + \sum_{k=1}^n \phi_k I_{kt} + \sum_{h=1}^{23} \rho_h D_{h,t}$ where $I_{kt} = D_{m,t} \cdot X_{i,t}$ and $D_{m,t}$ is a macro announcement dummy variable for release m . The Φ_m coefficients capture the instantaneous change in the conditional variance when an announcement has just occurred. The ϕ_m coefficients capture the conditional variance when an announcement has just occurred in conjunction with the level of financialization.

Table 48: Announcement (macro & commodity-specific) and financialization (WT) effects on futures conditional variance - ZLB Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m
Macroeconomic News Announcements												
Initial jobless claims	-1.21153***	1.13298***	0.09954***	-0.04231	-0.00259	0.06342	0.21483***	-0.14415***	-0.09709*	0.1488***	0.18374**	-0.15439**
ADP Employment	-1.28282***	1.14925***	-0.2666***	0.26325***	-0.31676**	0.29602**	0.39149***	-0.28059***	-0.02362	0.03027	0.2584	-0.18791
CB Consumer	-1.0095***	0.95291***	-0.1208*	0.13634**	0.23476	-0.15096	0.35533***	-0.24319***	-0.06261	0.08215	0.03993	-0.03143
Advance retail sales	-1.44751***	1.36922***	-0.26827***	0.29118***	-0.23984	0.28191**	0.27824**	-0.17361*	0.04551	0.01344	0.24711	-0.17905
Building permit	-1.45002***	1.32627***	-0.22186***	0.23564***	-0.31214**	0.3194**	0.20586*	-0.13806	0.07374	-0.01304	0.348*	-0.26397*
Construction spending	-2.30569***	2.13809***	-0.23935***	0.25757***	-0.02117	0.0686	0.64867***	-0.46006***	0.12297	-0.06384	0.28373	-0.19459
Consumer credit	-0.79955**	0.73032**	-0.10758	0.10135*	-0.14318	0.14386	-0.03395	0.02996	0.11497	-0.09873	-0.00563	0.00698
Consumer price index	-1.01447*	0.91337*	-0.28263***	0.29696***	-0.7987***	0.77006***	0.19019	-0.14663	-0.05376	0.07838	0.2773	-0.21835
Durable goods orders	-2.15349***	1.98627***	-0.06914	0.10072	0.11715	-0.04542	0.17983	-0.11856	-0.02163	0.08301	0.01347	0.00171
Existing home sales	-1.06498***	0.97209***	-0.16011*	0.17956***	-0.0873	0.12859	0.45233***	-0.33502**	0.07425	-0.0591	0.35467**	-0.24744*
Factory orders	0.12437	-0.09016	-0.01203	0.03389	0.02938	-0.00671	0.017	0.00185	-0.00773	0.02579	0.07383	-0.02227
GDP	-2.33991***	2.13709***	-0.15648**	0.19296***	-0.20107	0.26537*	0.23283*	-0.14512	-0.42491***	0.41968***	0.10617	-0.10666
Housing starts	-1.1428***	1.04986***	-0.12799*	0.14615**	-0.15675	0.17689	0.12599	-0.07216	0.06574	-0.00634	0.27081	-0.20975
Industrial production	-0.93279**	0.83091**	0.0163	0.00098	-0.15669	0.14745	-0.01285	0.0154	-0.21672**	0.17017*	0.47438***	-0.37574***
New home sales	-1.73073***	1.59581***	0.0124	0.03909	0.0316	0.02547	0.32965***	-0.22504***	-0.56512***	0.52614***	0.37812**	-0.28167**
Non-farm employment	0.03987	0.19314**	-0.08842**	0.31695***	-0.07465	0.38804***	0.20012***	-0.01693	0.13554*	0.03437	0.18153*	-0.06383
Pending home sales	-2.00334***	1.82328***	0.0023	0.00759	0.35399**	-0.29061**	0.42544**	-0.29754***	-0.0408	0.04121	1.07261***	-0.79564***
Personal consumption	-1.23574***	1.09775***	-0.09228	0.09922	-0.10453	0.12118	0.15379	-0.13091	-0.0152	0.06666	0.26107	-0.16543
Personal income	-1.13167***	1.02676***	-0.29254***	0.30452***	-0.64513***	0.63106***	-0.06091	0.05909	-0.15716	0.18682	0.37832*	-0.26719*
Producer price index	-1.18141***	1.11464***	-0.01249	0.05014	-0.47764***	0.46739***	0.22127*	-0.15756*	-0.12373	0.22807**	0.25436	-0.17472
Trade balance	0.46931***	-0.36887***	0.00694	0.03173	0.07888	-0.03074	-0.06512	0.05952	0.01704	0.02185	0.13914	-0.11843
Announcements specific to commodity markets												
Crude Oil Weekly inventory	-2.37324***	2.24469***									0.77405***	-0.01119
Natural Gas Weekly inventory												
Observations	495652		500857		492438		485244		315201		448530	
R ²	0.143723		0.084065		0.07403		0.080273		0.057804		0.163442	

This table presents estimates of eq. 10 using financialization variable WT_t . The equation is $\sigma_t^2 = \alpha_0 + \alpha_1 \sigma_{t-1}^2 + \alpha_2 \epsilon_t^2 + \sum_{m=1}^{22} \Phi_m D_{m,t} + \beta X_{i,t} + \sum_{k=1}^n \phi_k I_{kt} + \sum_{h=1}^{23} \rho_h D_{h,t}$ where $I_{kt} = D_{m,t} \cdot X_{i,t}$ and $D_{m,t}$ is a macro announcement dummy variable for release m . The Φ_m coefficients capture the instantaneous change in the conditional variance when an announcement has just occurred. The ϕ_m coefficients capture the conditional variance when an announcement has just occurred in conjunction with the level of financialization.

Table 49: Announcement (macro & commodity-specific) and financialization (PCA) effects on futures conditional variance - ZLB Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m
Macroeconomic News Announcements												
Initial jobless claims	0.0523***	0.0239***	0.0512***	-0.00208	0.06948***	0.00435	0.03286***	-0.00654**	0.07873***	0.01437***	-0.01883***	-0.01405***
ADP Employment	-0.00064	0.02039**	0.03401***	0.01693***	0.01975*	0.01844***	0.03716***	-0.01102*	0.01213	0.00286	0.01214	-0.01709
CB Consumer	0.05423***	0.00382	0.03491***	0.00805**	0.06318***	-0.00753	0.04855***	-0.00729	0.03441***	0.00766	-0.00136	-0.00468
Advance retail sales	0.08163***	0.01716	0.06425***	0.02067***	0.08051***	0.01868**	0.05908***	-0.00111	0.06138***	0.00211	0.01204	-0.01596
Building permit	0.02824***	0.02616**	0.0471***	0.01613***	0.05076***	0.0212***	0.031***	-0.00311	0.05838***	-0.00125	0.00152	-0.02018*
Construction spending	0.07983***	0.03904***	0.05463***	0.01756***	0.0567***	0.00613	0.06941***	-0.02122***	0.04758***	-0.00686	0.02882*	-0.01822
Consumer credit	0.01569	0.01426	0.00817	0.00565	0.02038*	0.00663	0.00402	-0.00019	-0.0017	-0.00942	0.00357	9e-04
Consumer price index	0.00563	0.01145	0.05637***	0.0168***	0.077***	0.04432***	0.0089	-0.00318	0.03889**	0.00686	-0.00879	-0.01715
Durable goods orders	0.05961***	0.05183***	0.04597***	0.00691*	0.06557***	-0.00012	0.03034***	-0.00654	0.07662***	0.01014	0.0154	-0.002
Existing home sales	0.01855*	0.02477**	0.04511***	0.01162***	0.05889***	0.0088	0.03025***	-0.0135**	0.00448	-0.0045	0.02979**	-0.02428**
Factory orders	0.02384**	-0.00138	0.02625***	0.00064	0.0211*	-0.00514	0.01934**	-0.00737	0.02307*	0.00569	0.0423***	-0.00473
GDP	0.04255***	0.05356***	0.0641***	0.01349***	0.10056***	0.0168**	0.04971***	-0.00819	0.07056***	0.03732***	-0.03347**	-0.00852
Housing starts	0.02871***	0.02024**	0.0389***	0.01092***	0.04433***	0.01277*	0.03447***	0.00137	0.0583***	-0.00097	-0.00431	-0.01496
Industrial production	-0.00494	0.00948	0.01734***	0.00079	0.01097	0.00834	0.00637	-0.00028	-0.01547	0.01559*	-0.01885	-0.03405***
New home sales	0.04713***	0.0378***	0.05702***	0.00197	0.06054***	0.00135	0.04559***	-0.01446**	0.05664***	0.05001***	0.00841	-0.02391**
Non-farm employment	0.25386***	0.00842**	0.2731***	0.03339***	0.36578***	0.03915***	0.17894***	-0.01511***	0.17564***	0.00139	0.09638***	-0.01587*
Pending home sales	0.02915***	0.03815***	0.01095*	0.00048	0.02361**	-0.01508**	0.04939***	-0.0162***	0.00786	0.00298	0.0293**	-0.07122***
Personal consumption	-0.01296	0.03662***	0.02088***	0.00532	0.03304***	0.00595	-0.01157	-0.01046*	0.06353***	0.0071	0.04514***	-0.01013
Personal income	0.01238	0.03356***	0.05491***	0.01713***	0.07143***	0.03372***	0.01392	0.00363	0.06359***	0.01845	0.02882*	-0.01777
Producer price index	0.06409***	0.01709	0.04481***	0.00272	0.05388***	0.02738***	0.02235**	-0.00973	0.14576***	0.02135**	0.02488	-0.01853
Trade balance	0.05802***	-0.01613***	0.04319***	0.00406	0.04435***	-0.00285	0.01022	-0.00094	0.04279***	0.00306	-0.01591	-0.01452*
Announcements specific to commodity markets												
Crude Oil Weekly inventory	0.11581***	0.07104***									0.77055***	-0.02633***
Natural Gas Weekly inventory												
Observations	495652		500857		492438		485244		315201		448530	
R^2	0.143674		0.084117		0.074892		0.068345		0.057901		0.163648	

This table presents estimates of eq. 10 using financialization variable PCA_t . The equation is $\sigma_t^2 = \alpha_0 + \alpha_1 \sigma_{t-1}^2 + \alpha_2 \epsilon_t^2 + \sum_{m=1}^{22} \Phi_m D_{m,t} + \beta X_{i,t} + \sum_{k=1}^n \phi_k I_{k,t} + \sum_{h=1}^{23} \rho_h D_h$ where $I_{k,t} = D_{m,t} \cdot X_{i,t}$ and $D_{m,t}$ is a macro announcement dummy variable for release m . The Φ_m coefficients capture the instantaneous change in the conditional variance when an announcement has just occurred. The ϕ_m coefficients capture the conditional variance when an announcement has just occurred in conjunction with the level of financialization.

Table 50: Announcement (macro & commodity-specific) and financialization (NLS) effects on futures returns (Anderson) - ZLB Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m
Macroeconomic News Announcements												
Initial jobless claims	-0.83304***	4.80872***	1.30136***	-2.76998***	1.51351***	-5.41528***	-0.18094***	-0.44161	-0.03951	-0.03905	-0.17615	-0.65806
ADP Employment	1.45481***	-9.64607***	-3.47772***	8.19803***	-0.85588*	-0.27397	0.18819	-3.25471***	0.90641***	-2.02449***	1.6377	6.55943
CB Consumer	0.32601***	-2.19784***	-0.08654***	0.16747*	-0.09333**	0.48159**	0.0532***	-0.05202	-0.12535*	0.24381*	0.00916	-0.21813
Advance retail sales	0.61228***	-3.48993***	-0.69401***	1.37295***	-0.58668***	1.60178***	0.22233***	-0.99377***	-0.11579	0.0038	0.24154	1.02516
Building permit	0.0613	-0.3238	-0.09834***	0.26647**	-0.05844	0.05574	-0.01267	0.0853	-0.02208	-0.07134	0.00333	0.16231
Construction spending	0.02571	-0.37552***	-0.04335**	0.06124	0.14485**	-0.49983*	0.00169	-0.43534***	0.06251	-0.09691	-0.11982	-0.66133
Consumer credit	0.05511***	-0.32602**	0.03181	-0.05195	-0.02117	0.21001	0.00903	-0.02882	0.05186	-0.09531	0.10573***	0.49068**
Consumer price index	-0.01576	-0.10973	-0.13723***	0.45268***	-0.13122**	0.56479*	-0.00316	-0.47023***	0.0203	-0.10918	0.09427	0.45338
Durable goods orders	0.25801***	-1.43914***	-0.17342***	0.54398***	-0.20687***	1.41255***	0.046***	0.09077	0.12065	-0.13494	-0.0957	-0.63709
Existing home sales	0.08048**	-0.19113	-0.07608**	0.17506*	0.02678	0.01989	0.05858***	-0.27141**	-0.03255	0.09035	0.16546	0.82944
Factory orders	-0.06407**	0.41905	-0.05965	0.10411	-0.05681	0.14727	0.00558	0.00517	0.04761	-0.08616	0.06404	0.5244
GDP	0.14299***	-0.57705**	-0.22919***	0.49235***	-0.51135***	1.86747***	0.0553***	0.01044	-0.11526	0.11455	-0.01148	-0.24575
Housing starts	0.21014***	-1.20246***	-0.13752***	0.20306	-0.18062***	0.3336	0.03393*	0.10134	-0.14373	0.28336	-0.07807	-0.47118
Industrial production	0.27782***	-1.61472***	-0.03733	0.07998	-0.06987	0.24839	0.02064	-0.05783	-0.13892	0.19445	-0.1203	-0.84494
New home sales	0.19379***	-1.04484***	-0.11904***	0.28827**	-0.10453	0.38801	0.10887***	-0.02466	-0.25714*	0.42813*	0.06861	0.33318
Non-farm employment	6.8008***	-28.80869***	-4.18699***	2.42785***	-8.39761***	31.08609***	1.86738***	-1.87189	-0.33425	1.12279	0.72664***	6.79461***
Pending home sales	0.17443***	-1.35488***	-0.04301	0.07965	-0.05661	0.1933	0.0172	-0.38***	-0.15474	0.24132	0.05142	-0.11034
Personal consumption	0.02469	-0.05946	-0.09105	0.22025	-0.00139	-0.02684	0.01243	0.31257	-0.10885	0.2518	-0.0913	-0.55506
Personal income	-0.13809	1.29681	-0.15589	0.30882	-0.52382	2.29384	-0.01377	-0.38751	-0.91839	1.47612	-0.41495	-3.37394
Producer price index	0.10841***	-0.57131**	-0.07614**	0.1613*	0.06026	-0.2587	0.01921	-0.07759	0.19627***	-0.34206**	-0.0633	-0.34248
Trade balance	-0.00625	-0.39315	-0.05142	0.06554	0.01023	-0.14311	-0.01747	-0.02871	-0.0533	0.11882	0.0098	0.05177
Announcements specific to commodity markets												
Crude Oil Weekly inventory	0.09247***	-1.13483***										
Natural Gas Weekly inventory												
Observations	495652	500857	492438	485244					315201		448530	
R ²	0.027288	0.094458	0.001131	0.000753					0.000466		0.02946	

This table presents estimates of eq. 6, $R_t^{t+\tau} = \alpha + \sum_{m=1}^{22} \gamma_m S_{m,t} + \delta X_{t,i} + \sum_{m=1}^{22} \theta_m (S_{m,t} \cdot X_t) + \beta R_{t-\tau}^t + \epsilon_t$ using the method proposed by Kurov et al. (2019) and financialization variable NLS_t . The γ_m coefficients capture the instantaneous change in return when an announcement has just occurred and especially if that announcement was unanticipated. The coefficients θ_m capture the instantaneous change in return when an announcement has just occurred in conjunction with the level of financialization.

Table 51: Announcement (macro & commodity-specific) and financialization (MSCT) effects on futures returns (Anderson) - ZLB Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m
Macroeconomic News Announcements												
Initial jobless claims	-3.4985***	18.90092***	-1.2614***	5.38556***	-1.57234***	9.3705***	-0.69489**	1.90344	0.85523	-2.12814	-0.20246	0.5405
ADP Employment	12.16782***	-68.5529***	1.1199	-6.91631***	2.38213*	-16.17849**	2.47621***	-8.32237**	-1.14221	2.23028	3.55202*	-12.76095
CB Consumer	0.42923***	-2.00483**	0.04019	-0.23643	0.1961**	-0.90222**	0.28626***	-0.75678***	0.13955	-0.34506	0.05092	-3e-04
Advance retail sales	-0.83045	6.08455**	0.22582	-1.36142	0.25212	-2.17511	1.2003***	-3.84049***	0.25492	-0.93943	0.80905*	-2.93905*
Building permit	-0.04888	0.32251	0.04956	-0.26896	0.00389	-0.2006	0.09601	-0.3224	-0.11114	0.12247	0.14392	-0.53205
Construction spending	-0.50806***	2.70059***	0.02047	-0.11327	0.13097	-0.51089	-0.00817	0.07064	-0.11255	0.27895	0.10314	-0.39062
Consumer credit	-0.30767***	1.9366***	-0.10764	0.40943*	0.09849	-0.33065	0.13615***	-0.43231***	-0.00482	0.01806	0.00364	0.0901
Consumer price index	-0.01685	-0.0622	0.15814	-0.50904	0.11808	-0.70676	-0.01168	0.10971	-0.37368	0.79481	0.03663	-0.05085
Durable goods orders	0.73686***	-4.00038***	0.34027***	-1.12842***	0.37588***	-1.50935***	0.36649***	-1.03676***	0.61114*	-1.38579*	0.12079	-0.32727
Existing home sales	0.408*	-1.9713	0.40344***	-1.46019***	0.1797	-0.74553	0.23716**	-0.67822*	0.34447	-0.78701	0.16795	-0.66551
Factory orders	-0.00398	-0.13317	0.01404	-0.12267	-0.02418	-0.00072	-0.07721	0.29447	-0.0261	0.07023	-0.07215	0.16059
GDP	0.08699	-0.22551	0.51088***	-1.83947***	0.07864	-0.81745	0.25422**	-0.66606**	0.12538	-0.4128	0.10129	-0.25845
Housing starts	0.38009**	-1.9577**	0.07925	-0.53593	-0.01453	-0.48056	0.31232**	-0.89205**	-0.48741*	1.17585*	0.23858	-0.8245
Industrial production	0.40763	-1.99943	0.142	-0.52726	0.09281	-0.50746	0.11369	-0.30047	0.0561	-0.21217	0.15558	-0.49951
New home sales	0.44752	-2.09028	0.14022	-0.5444	0.15222	-0.79358	0.5021***	-1.31525***	0.53311**	-1.27238**	0.03119	-0.06902
Non-farm employment	10.83042***	-40.68727***	-5.53137***	14.98096***	17.39855***	-66.23306***	9.83986***	-25.4294***	7.70857**	-18.04679**	14.27429***	-55.84325***
Pending home sales	0.67428**	-3.67205**	-0.20438*	0.67763*	-0.1071	0.46758	-0.02457	0.15603	0.29649	-0.76922	0.43603**	-1.5062*
Personal consumption	-0.78074**	4.48005**	0.41303**	-1.45033**	0.00886	-0.06612	-0.01348	0.05848	-0.1073	0.30859	0.02985	-0.11199
Personal income	0.44784	-2.71098	-0.06707	0.05507	0.1196	-0.974	-0.34479	1.22193	-2.76826	6.4935	1.44668*	-5.01004*
Producer price index	0.21874	-0.99707	-0.09526	0.25653	0.01538	-0.06249	0.15014*	-0.45001*	0.06375	-0.09269	0.02875	-0.1114
Trade balance	0.59926***	-3.63413***	0.09718	-0.43174	0.11275	-0.57538	0.0398	-0.19529	-0.09628	0.24428	-0.17501	0.63244
Announcements specific to commodity markets												
Crude Oil Weekly inventory	-0.40884***	1.77785***										
Natural Gas Weekly inventory												
Observations	495652	0.108159	500857	0.005869	492438	0.001405	485244	0.000996	315201	0.000218	448530	0.011047
R^2												

This table presents estimates of eq. 6, $R_t^{t+\tau} = \alpha + \sum_{m=1}^{22} \gamma_m S_{m,t} + \delta X_{t,i} + \sum_{m=1}^{22} \theta_m (S_{m,t} \cdot X_t) + \beta R_{t-\tau}^t + \epsilon_t$ using the method proposed by Kurov et al. (2019) and financialization variable $MSCT_t$. The γ_m coefficients capture the instantaneous change in return when an announcement has just occurred and especially if that announcement was unanticipated. The coefficients θ_m capture the instantaneous change in return when an announcement has just occurred in conjunction with the level of financialization.

Table 52: Announcement (macro & commodity-specific) and financialization (WT) effects on futures returns (Anderson) - ZLB Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m
Macroeconomic News Announcements												
Initial jobless claims	1.36855	-1.51436	-4.07104***	3.9523***	-6.72173***	6.37861***	-0.31758	0.13314	0.31097	-0.31234	-0.10276	0.02844
ADP Employment	1.60289	-0.92537	10.2349***	-9.87601***	6.19737	-6.35252	3.77054*	-2.91593	-1.8723	1.45818	2.33429	-1.59022
CB Consumer	0.39648	-0.28755	0.14997	-0.16026	0.64709**	-0.57255**	0.5926***	-0.42227***	0.24767	-0.21095	0.05556	-0.00389
Advance retail sales	-6.0821***	5.9967***	2.20452***	-2.15848***	3.07237***	-2.95933***	2.90303***	-2.23494***	0.098	-0.18911	1.31687	-0.99203
Building permit	-0.64345	0.58394	0.1187	-0.12784	0.00122	-0.04243	0.1792	-0.14614	-0.116	0.04751	0.32806	-0.25879
Construction spending	2.15148***	-2.03026***	-0.09717	0.07386	-0.28443	0.28268	0.40211*	-0.30942*	-0.17737	0.16003	0.26949	-0.21135
Consumer credit	-5.3691***	4.7513***	-0.2422**	0.23177**	0.37399*	-0.28055	0.21116**	-0.15767**	-0.09852	0.08686	-0.13025	0.12316
Consumer price index	-0.53607	0.45701	0.66508***	-0.57874***	0.72311	-0.66783*	0.23678	-0.17501	-0.31976	0.24254	-0.11449	0.10691
Durable goods orders	-0.81589	0.77461	0.86028***	-0.75652***	1.41428***	-1.20315***	0.68589***	-0.50179***	0.13517	-0.08363	0.44277	-0.30611
Existing home sales	0.36055	-0.26099	0.71454***	-0.65953***	0.2777	-0.22602	0.24358	-0.15483	0.24503	-0.19762	0.00109	0.00185
Factory orders	0.1665	-0.17409	0.0448	-0.06086	-0.06571	0.03739	-0.14775	0.12626	-0.02696	0.02604	-0.22217	0.15387
GDP	-1.67479**	1.56933***	0.69183***	-0.66795***	1.26345***	-1.24969***	0.32524	-0.21685	0.11912	-0.14467	0.19693	-0.12666
Housing starts	0.07792	-0.04167	0.16069	-0.21043	0.05287	-0.15565	0.46636*	-0.33871*	-0.08721	0.08225	0.78122	-0.57938
Industrial production	-2.16304*	2.00931*	0.13339	-0.12851	0.28812	-0.27283	0.06923	-0.03626	0.14998	-0.15798	0.46663	-0.34506
New home sales	-0.73674	0.71969	0.34835*	-0.33096*	0.46072	-0.43331	1.17232***	-0.82994***	0.41321*	-0.37187*	-0.08132	0.07209
Non-farm employment	-32.76694***	32.70746***	-15.90653***	11.07642***	73.73413***	-63.48282***	36.35009***	-26.66175***	5.71951	-4.78353	12.32236***	-9.71167***
Pending home sales	-1.21873	1.12059	-0.10586	0.08514	0.22009	-0.21162	-0.16364	0.14935	0.41185	-0.38062	0.25709	-0.14914
Personal consumption	-2.25553*	2.04298*	0.44357	-0.40978	0.02019	-0.02345	-0.2252	0.18198	0.07674	-0.04764	0.20153	-0.15132
Personal income	2.47045	-2.21379	0.3578	-0.35631	2.58339	-2.41388	-0.25889	0.20678	1.63787	-1.4689	3.63358**	-2.76451*
Producer price index	-0.76248	0.71215	0.11668	-0.12031	-0.10513	0.09619	0.17951	-0.12803	-0.23958	0.22102	0.15646	-0.12522
Trade balance	0.58026**	-0.58679***	0.15017	-0.16161**	0.25595	-0.24403	0.11813	-0.10933	0.04415	-0.03025	-0.3688	0.28819
Announcements specific to commodity markets												
Crude Oil Weekly inventory	-1.56992***	1.29326***										
Natural Gas Weekly inventory											-0.0844	-0.12707
Observations	495652		500857		492438		485244		315201		448530	
R ²	0.123462		0.241583		0.00372		0.003665		0.000198		0.00638	

This table presents estimates of eq. 6, $R_t^{t+\tau} = \alpha + \sum_{m=1}^{22} \gamma_m S_{m,t} + \delta X_{t,i} + \sum_{m=1}^{22} \theta_m (S_{m,t} \cdot X_t) + \beta R_{t-\tau}^t + \epsilon_t$ using the method proposed by [Kurov et al. \(2019\)](#) and financialization variable WT_t . The γ_m coefficients capture the instantaneous change in return when an announcement has just occurred and especially if that announcement was unanticipated. The coefficients θ_m capture the instantaneous change in return when an announcement has just occurred in conjunction with the level of financialization.

Table 53: Announcement (macro & commodity-specific) and financialization (PCA) effects on futures returns (Anderson) - ZLB Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m
Macroeconomic News Announcements												
Initial jobless claims	-0.29204***	0.16437*	0.44648***	-1.31662***	0.53806***	-1.61289***	-0.13729**	-0.7536***	-0.058	-0.33967*	-0.06101	0.00913
ADP Employment	0.50686***	-0.40116	-1.05149***	0.23119***	-1.06189***	0.36744***	0.33236**	0.06709	-0.15599	-0.03367	0.12639	-0.26939
CB Consumer	0.07707***	-0.02505	-0.03302***	-0.54668***	-0.0041	-0.40451*	0.06322***	0.03165	-0.00102	0.12269	0.04987	-9e-05
Advance retail sales	0.11067***	0.16374***	-0.25618***	-0.00929	-0.29142***	-0.03377***	0.13171***	-0.02635**	-0.12486**	-0.01996	0.00116	-0.09997
Building permit	0.00575	0.0148	-0.02338	-0.1285***	-0.04432	-0.16544***	-0.00302	-0.1218***	-0.05977*	-0.01459	-0.00698	-0.02396
Construction spending	-0.03861***	0.0202***	-0.01106	-0.01109	0.03554	-0.0043	0.01247	-0.01106	0.0116	0.00457	-0.00789	-0.02055
Consumer credit	0.01533**	0.07042***	0.02128***	0.00585	0.01816	0.01413	0.00917	0.01776	0.00392	0.01498	0.03135**	0.00988
Consumer price index	-0.02594	0.00738	0.0069	0.01225**	-0.03611	-0.01725*	0.02231	-0.01207**	-0.03373	0.00742	0.02521	0.00604
Durable goods orders	0.04041**	-0.017	0.00021	-0.0327***	0.04958***	-0.03628	0.05682***	0.01236	0.03574	0.02003	0.03701	-0.0194
Existing home sales	0.07033***	-0.02089	-0.0398***	-0.04192***	0.02065	-0.06483***	0.05277***	-0.03684***	0.01155	-0.00896	-0.00599	-0.0095
Factory orders	-0.02715	-0.00649	-0.02539**	-0.04024***	-0.02513	-0.01197	0.00939	-0.00394	0.00309	-0.01819	-0.02066	0.01346
GDP	0.05654**	0.04005	-0.06963***	-0.00603	-0.15341***	-0.00134	0.0567***	0.01045	-0.05198**	0.00451	0.03009	-0.01096
Housing starts	0.03054	-0.01984	-0.07694***	-0.03922***	-0.12238***	-0.06755**	0.04677**	-0.01931	0.01041	-0.01275	0.01717	-0.04565
Industrial production	0.06505*	0.01644	-0.01448	-0.01488	-0.02281	-0.01211	0.02414	-0.03934**	-0.03749	0.01063	0.01441	-0.02931
New home sales	0.07022**	0.00014	-0.02903*	0.00535	-0.03202	-0.00129	0.11377***	0.00017	-0.02707	-0.01602	0.01258	0.00291
Non-farm employment	3.82753***	0.32153	-1.76724***	-0.02047**	1.70039***	-0.02689	2.38256***	-0.04844***	0.06805	-0.03663*	-0.11164**	-1.39839***
Pending home sales	0.03391	-0.00958	-0.00701	-0.70403***	-0.01932	-3.67969***	0.03295	-0.71165***	-0.0372*	-0.43146	0.04803	-0.02898
Personal consumption	0.01577	0.0987***	-0.02446	0.00675	-0.00639	-0.01023	0.00346	0.02546	0.02042	-0.03447	0.00204	-0.01146
Personal income	-0.03213	-0.08062	-0.04735	-0.02858*	-0.16087	-0.00059	0.01778	-0.00205	-0.09333	-0.00411	0.01728	-0.22637*
Producer price index	0.03607**	0.00543	-0.02068*	-0.0224	0.00527	-0.13204	0.01895	0.06484	0.02103	-0.13514	-0.00605	-0.00893
Trade balance	-0.06041***	-0.03634***	-0.03215**	-0.0069	-0.01908	0.00747	-0.0189	-0.00985	0.00847	0.01948	0.00688	0.02774
Announcements specific to commodity markets												
Crude Oil Weekly inventory	-0.12217***	0.04822***									-0.01973	0.00443
Natural Gas Weekly inventory												
Observations	495652	0.019709	500857	0.030138	492438	0.005286	485244	0.000913	315201	0.000208	448530	0.009579
R ²												

This table presents estimates of eq. 6, $R_t^{t+\tau} = \alpha + \sum_{m=1}^{22} \gamma_m S_{m,t} + \delta X_{t,i} + \sum_{m=1}^{22} \theta_m (S_{m,t} \cdot X_t) + \beta R_{t-\tau}^t + \epsilon_t$ using the method proposed by Kurov et al. (2019) and financialization variable PCA_t . The γ_m coefficients capture the instantaneous change in return when an announcement has just occurred and especially if that announcement was unanticipated. The coefficients θ_m capture the instantaneous change in return when an announcement has just occurred in conjunction with the level of financialization.

Table 54: Announcement (macro & commodity-specific) and financialization (MM-NLS) effects on futures returns (Anderson) - ZLB Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m
Macroeconomic News Announcements												
Initial jobless claims	-0.68438***	3.97081**	1.01755***	-2.55875***	0.99883***	-3.91163***	-0.16075***	-0.52121	-0.28024	0.48209	-0.09415	-0.28484
ADP Employment	1.82745***	-12.51046***	-2.25487***	5.91499***	-1.12463**	1.43037	0.31441**	-2.7241***	0.79763**	-2.09857***	0.74104	2.53537
CB Consumer	0.22258***	-1.53166***	-0.04711*	0.06552	-0.05459	0.38676*	0.05638***	-0.01042	-0.09299	0.19939	0.06397	0.12364
Advance retail sales	0.82418***	-6.25378***	-0.54632***	1.17704***	-0.51514***	1.68241***	0.19115***	-0.80562**	-0.10987	-0.0025	0.04954	-0.16674
Building permit	0.03068	-0.16626	-0.05359**	0.09315	-0.04978	-0.0128	-0.01503	0.11262	-0.01313	-0.09849	-0.04234	-0.18124
Construction spending	-0.143***	0.68335***	-0.00334	-0.03155	0.10576**	-0.42762	0.02155	-0.36911***	0.04666	-0.07778	-0.02734	-0.26316
Consumer credit	0.08185***	-0.58718**	0.02708	-0.04739	-0.00591	0.19061	0.01297*	-0.10677	0.04417	-0.09082	0.04381**	0.15005
Consumer price index	0.04962	-0.76691	-0.11427***	0.44495***	-0.09185*	0.45303	0.01402	-0.49608***	0.01567	-0.11579	0.04299	0.27267
Durable goods orders	0.21008***	-1.54801***	-0.13212***	0.51623***	-0.11479***	1.22123***	0.04921***	-0.03479	0.03248	0.01758	0.00696	-0.53114
Existing home sales	0.10898**	-0.49021	-0.08103**	0.22872**	0.02601	0.0342	0.06833***	-0.27187**	-0.02006	0.07805	0.01952	0.11153
Factory orders	-0.07307**	0.50287	-0.0462	0.08112	-0.06943	0.27166	0.00613	0.02457	0.05257	-0.10942	0.02659	0.55278
GDP	0.15102**	-0.77865***	-0.14163***	0.36659***	-0.44047***	2.05661***	0.05428***	0.11586	-0.11181	0.12588	0.02537	-0.04198
Housing starts	0.19712***	-1.4364**	-0.10806***	0.11121	-0.13196***	0.07424	0.02684	0.00487	-0.2459	0.52494*	-0.02819	-0.43265
Industrial production	0.33463***	-2.48975***	-0.02609	0.06038	-0.04484	0.1747	0.0242	-0.14378	-0.15372	0.25071	-0.01979	-0.41996
New home sales	0.21978***	-1.41502**	-0.07643**	0.19144*	-0.08983*	0.41574	0.11216***	-0.07659	-0.2031	0.37289	0.00843	-0.05567
Non-farm employment	9.11237***	-51.89885***	-1.63537***	-2.91428***	-5.66391***	31.3036***	2.01702***	-3.74282**	0.1968	0.1527	-0.93204***	-32.24331***
Pending home sales	0.30814***	-2.36437***	-0.01799	0.01608	-0.04575	0.19848	0.02773	-0.24074	-0.19165*	0.35923*	0.04942	-0.22529
Personal consumption	0.0234	-0.05907	-0.06801	0.17782	0.00154	-0.05318	-0.00503	0.30856	-0.17134	0.42517	-0.02169	-0.30693
Personal income	-0.16414	1.70624	-0.01802	-0.13317	-0.41291	2.33423*	-0.00152	-0.50577	-0.95184*	1.7327*	-0.13516	-2.87258*
Producer price index	0.12712***	-0.90385**	-0.07109**	0.18082**	0.04713	-0.27861	0.02462*	-0.14949	0.24757***	-0.49273***	-0.02209	-0.19336
Trade balance	-0.02521	-0.25224	-0.05098*	0.07376	-0.00693	-0.07648	-0.01693	0.01296	-0.00989	0.03982	0.05012	0.56668
Announcements specific to commodity markets												
Crude Oil Weekly inventory	0.05152***	-1.35704***										
Natural Gas Weekly inventory											-0.0973***	-0.03727
Observations	495652		500857		492438		485244		315201		448530	
R ²	0.016512		0.00701		0.001077		0.000611		0.000313		0.041974	

This table presents estimates of eq. 6, $R_t^{t+\tau} = \alpha + \sum_{m=1}^{22} \gamma_m S_{m,t} + \delta X_{t,i} + \sum_{m=1}^{22} \theta_m (S_{m,t} \cdot X_t) + \beta R_{t-\tau}^t + \varepsilon_t$ using the method proposed by Kurov et al. (2019) and financialization variable $MM_N L S_t$. The γ_m coefficients capture the instantaneous change in return when an announcement has just occurred and especially if that announcement was unanticipated. The coefficients θ_m capture the instantaneous change in return when an announcement has just occurred in conjunction with the level of financialization.

Table 56: Announcement (macro & commodity-specific) and financialization (NLS) effects on futures returns (Kurov) - COVID Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m
Macroeconomic News Announcements												
Initial jobless claims	-0.05304	0.15319	0.67456***	-1.29179***	0.07436	-0.34916	-0.01207	-0.07707	-0.01584	0.07139	-0.11231**	-1.56397***
ADP Employment	0.22435	-0.60967	-0.44274***	0.90844***	-0.70483***	3.01802***	0.02568***	0.16286	0.00351	-0.01967	-0.1205**	-2.93345**
CB Consumer	0.01593	-0.05564	-0.3178***	0.71482**	-0.00624	0.06684	-0.02688	0.13241	-0.02079	0.10325	0.06404	0.39286
Advance retail sales	-0.05187	0.33324	-0.4164***	0.961***	0.20226**	-0.82729*	0.0121	-0.07264	-0.01557	0.09594	-0.02402	-0.34742
Building permit	0.03941	0.03705	-0.05159	0.11245	-0.11363*	0.40468	0.03852**	-0.16867**	0.0112	0.00524	0.14075***	0.99814*
Construction spending	0.65898**	-2.88345**	-0.0363	0.03066	0.07823	-0.48804	0.01588	-0.16719	0.01435	0.114	-0.13218*	-2.26882**
Consumer credit	-0.0394	0.12984	-0.04807	0.10213	0.09214**	-0.39242**	-0.00315	0.06116	-0.01061	0.13497	-0.01933	-0.12264
Consumer price index	0.31416*	-1.56755**	-1.09536***	2.65481***	-0.19543**	0.46196	-0.08642***	0.4635**	-0.08641***	0.22573*	-0.01456	0.15191
Durable goods orders	0.3507	-1.58708	-0.48512***	1.08308***	-0.22685*	1.10379*	-0.03552	0.1118	0.0217	-0.3454	0.00889	-0.33582
Existing home sales	0.37743	-1.8963*	-0.1024	0.30048	-0.24303**	1.09853**	-0.02365	0.1084	0.03241	-0.18899	0.08941	-0.06124
Factory orders	0.20435	-0.68398	-0.02856	0.01114	-0.06706	0.21191	0.04305*	0.09729	0.02654	-0.31984	0.26264**	0.86038
GDP	-0.20342	0.86461	-0.67894***	1.57151***	-0.18048	0.75512	-0.05325***	0.21315**	-0.0513**	-0.03363	-0.055**	-0.40989
Housing starts	0.36735**	-1.8038**	-0.03907	0.08773	-0.04173	0.00353	-0.02956	0.16777	0.02437	-0.28613	-0.16296***	2.02325***
Industrial production	-0.17304	0.64564	-0.17486**	0.50872***	-0.00921	-0.19491	-0.02577	0.08019	0.00533	0.04843	-0.04705	-0.36049
New home sales	-0.23104	0.98392	-0.25247**	0.63549**	0.06011	-0.42542	-0.00855	0.01137	0.02505	-0.06303	0.00508	1.08808*
Non-farm employment	-0.2731	1.19546	-2.14386***	4.54338***	-0.78667***	3.34173**	0.0252***	0.52836*	0.02156	-0.18188	-0.19984**	-5.81269**
Pending home sales	-0.06442	0.34858	-0.03672	0.05687	-0.00501	0.03113	0.00715	-0.00186	-0.01095	0.15398	-0.05828	-0.67781
Personal consumption	0.11481	-0.56463	-0.24542***	0.49336***	-0.00707	0.05437	0.00234	-0.00638	0.01645	0.12192	0.05777	2.02525**
Personal income	-0.04283	0.0547	0.39444	-0.86742	-0.01019	0.01571	-0.01784*	-0.27411*	-0.00134	-0.13281	-0.13135	-3.1879
Producer price index	-0.16712	0.84336	-0.15421	0.30151	-0.03584	0.11642	0.00967	-0.04937	0.02245	0.20957	-0.03629	0.43642
Trade balance	-0.73246	2.12028	-0.33167	0.53286	-0.21421	-0.08428	-0.04745	-0.53524	-0.58781***	0.6007**	-0.07978	6.76062**
Announcements specific to commodity markets												
Crude Oil Weekly inventory	-0.06204	-0.71763**										
Natural Gas Weekly inventory											-0.14237***	0.47267
Observations	167663		167808		167513		167800		99525		167472	
R ²	0.004142		0.003897		0.001678		0.000988		0.001109		0.001805	

This table presents estimates of eq. 6, $R_t^{t+\tau} = \alpha + \sum_{m=1}^{22} \gamma_m S_{m,t} + \delta X_{t,i} + \sum_{m=1}^{22} \theta_m (S_{m,t} \cdot X_t) + \beta R_{t-\tau}^t + \epsilon_t$ using the method proposed by Kurov et al. (2019) and financialization variable NLS_t . The γ_m coefficients capture the instantaneous change in return when an announcement has just occurred and especially if that announcement was unanticipated. The coefficients θ_m capture the instantaneous change in return when an announcement has just occurred in conjunction with the level of financialization.

Table 57: Announcement (macro & commodity-specific) and financialization (NLS) effects on futures conditional variance - COVID Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m
Macroeconomic News Announcements												
Initial jobless claims	-0.09636	3.35298*	0.02294	-0.15107	0.19983***	-1.07585***	0.01309	-0.04209	0.0834***	-0.14983	0.00017	0.15059
ADP Employment	0.65757*	-4.72734***	0.06518	-0.34747*	0.28162***	-0.14248	0.06963***	-0.06428	-0.09531**	-0.20166	0.0188	0.66031
CB Consumer	-0.94417***	-0.62403	0.21887***	-0.52652**	0.10017	-1.30271***	0.00055	-0.06044	0.03359	-0.23366	0.02124	0.0448
Advance retail sales	0.12243	-2.33292	0.26516**	-0.68949***	0.41279***	-0.5248	0.02151	-0.28203***	0.00377	-0.2267	0.05886	-0.29694
Building permit	0.48651	1.59467	-0.28847***	-0.00757	0.11495	0.26274	0.02049	0.04902	0.04828	-0.03058	0.03644	-0.69603
Construction spending	-0.30513	-1.01085	0.0425	-0.05809	-0.03163	-0.22089	-0.00162	0.07112	-0.00531	0.16762	0.00908	-0.03468
Consumer credit	0.2047	-1.53043	0.02835	-0.10382	0.09498	-0.71454*	-0.01401	-0.32437***	0.02753	0.08909	0.01673	-0.33224
Consumer price index	0.30876	0.6181	0.14219	-0.02822	0.26772***	0.15355	0.13431***	0.17237*	-0.02796	-0.04975	0.01102	-0.71745
Durable goods orders	-0.14714	1.43927	0.03029	0.21013	0.00619	-0.58963*	-0.0313*	-0.07651	0.0497	-0.06524	-0.10203**	-0.07702
Existing home sales	-0.21432	0.77755	-0.04377	0.29942	0.18678*	0.04353	0.0559***	-0.09597	0.18962***	-0.06904	0.08217*	-1.33778**
Factory orders	-0.10802	-0.49357	-0.09774	0.1993	0.01168	0.57755	0.03064*	0.21455*	0.0198	0.13061	-0.03477	-0.97256
GDP	0.08325	-2.59059	-0.02549	0.62377***	-0.03792	-0.55955*	-0.01721	-0.34547***	0.00297	-0.23786	-0.11512**	-0.71962
Housing starts	0.54768	1.97644	-0.26025***	0.05228	0.12271	0.48892	0.02738*	-0.06923	0.04611	-0.37882*	0.01934	0.67079
Industrial production	-0.45243	-0.1923	-0.03451	0.27323*	-0.15184	-0.36886	-0.0113	-0.07301	0.08228*	0.01327	0.00786	-0.48328
New home sales	0.08668	-0.4191	0.07095	-1.44824***	0.23089***	-0.99621***	-0.01913	-0.04275	0.02849	0.3294**	-0.01434	1.36646***
Non-farm employment	0.17025	1.42351	0.80207***	-0.65071***	0.54701***	-0.73662**	0.12699***	0.1289	0.04275	0.27753	0.09921**	-0.59763
Pending home sales	-0.29046	-0.7952	0.31423***	-0.29805	0.20897***	-0.03802	-9e-04	-0.06165	0.06603	-0.06209	0.03494	-3.1579***
Personal consumption	0.14833	-1.21877	0.14734	-0.22859	0.04742	0.24194	0.00385	-0.0286	0.06989	-0.03114	-0.07238	-2.00898***
Personal income	0.25973	-0.28073	0.12412	0.46855**	-0.00291	-0.54811	0.00321	-0.00955	0.0741*	-0.51366**	-0.06398	0.07551
Producer price index	0.08816	0.43065	-0.15708	-0.35724*	0.22355***	-0.59363*	-0.00614	-0.03986	0.09817**	-0.15742	-0.04277	0.93243*
Trade balance	-0.01952	0.74449	0.17818**	0.0001	0.17335**	0.0001	0.03429**	NA	0.10701***	0.0001	0.07544*	-0.17694
Announcements specific to commodity markets												
Crude Oil Weekly inventory	-0.00049	0.0001									0.53992***	0.0001
Natural Gas Weekly inventory												
Observations	167663		167808		167513		167800		99525		167472	
R ²	0.026858		0.104799		0.072185		0.086944		0.047558		0.137333	

This table presents estimates of eq. 10 using financialization variable NLS_t . The equation is $\sigma_t^2 = \alpha_0 + \alpha_1 \sigma_{t-1}^2 + \alpha_2 \epsilon_t^2 + \sum_{m=1}^{22} \Phi_m D_{m,t} + \beta X_{i,t} + \sum_{k=1}^n \phi_k I_{kt} + \sum_{h=1}^{23} \rho_h D_{h,t}$ where $I_{kt} = D_{m,t} \cdot X_{i,t}$ and $D_{m,t}$ is a macro announcement dummy variable for release m . The Φ_m coefficients capture the instantaneous change in the conditional variance when an announcement has just occurred. The ϕ_m coefficients capture the conditional variance when an announcement has just occurred in conjunction with the level of financialization.

Table 58: Announcement (macro & commodity-specific) and financialization (MM-NLS) effects on futures returns (Kurov) - COVID Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m
Macroeconomic News Announcements												
Initial jobless claims	0.01284	-0.42931	0.18523***	-0.60124***	-0.18006***	1.43876***	-0.01157	-0.0734	-0.01816	0.06554	-0.01707	-0.54064
ADP Employment	0.29525	-1.27353	-0.20069***	0.83071**	-0.00499	-0.26184	0.02301***	0.13008	0.00089	0.0084	-0.02549*	-0.41182
CB Consumer	0.07655	-0.51606	-0.09771**	0.47099*	-0.06772	0.46189	-0.04213	0.17658	-0.03088	0.10234	-0.01077	1.92141*
Advance retail sales	-0.02923	0.34904	-0.07305***	0.4339***	-0.01274	0.2268	0.01271	-0.0694	-0.01833	0.09338	-0.00873	0.00984
Building permit	-0.09509	1.00771	0.02568	-0.19516	-0.09011*	0.39078	0.04005**	-0.13851*	0.00371	0.04582	0.08024**	0.86233**
Construction spending	0.41652**	-2.77195**	-0.0419	0.08539	0.02789	-0.34852	0.01859	-0.13908	0.01249	0.09305	-0.0121	-1.19446**
Consumer credit	-0.00923	-0.01745	-0.02585	0.12077	0.05161**	-0.29881**	-0.00532	0.0638	-0.03173	0.19807	-0.01666	0.08127
Consumer price index	-0.24917	1.86806*	-0.43977***	2.3921***	-0.19333***	0.58014**	-0.07806***	0.27258*	-0.10369**	0.20287	-0.03498	0.23866
Durable goods orders	0.09373	-0.74428	-0.13019***	0.56867**	-0.04308	0.18076	-0.0335	0.07762	0.02374	-0.23976	0.04727	-0.54832
Existing home sales	0.74825***	-5.48168***	-0.10481	0.80092*	-0.13335	0.7541	-0.01008	0.04062	0.03378	-0.12891	0.1072	-0.39774
Factory orders	0.00864	0.26749	-0.05923	0.18085	-0.00838	-0.08036	0.04497	0.03837	0.08834	-0.5174**	0.21529***	1.18248
GDP	-0.01706	-0.08802	-0.33648***	1.71065***	-0.00324	-0.10068	-0.0603***	0.19003**	-0.04116	-0.0659	0.01248	-0.86484
Housing starts	0.21757**	-1.76668***	-0.01221	0.05853	0.00456	-0.24308	-0.03423*	0.15038*	0.03046	-0.22306	0.03863	0.9263***
Industrial production	0.34103**	-2.13714*	-0.00293	-0.20915*	-0.07816	0.16609	-0.02928*	0.09407	0.00574	0.03016	-0.02946	-0.32844
New home sales	-0.23837	1.50728	-0.12033***	0.7806***	0.04347	-0.47414**	-0.00786	0.00541	0.03361	-0.07157	-0.05379	0.74563
Non-farm employment	-0.38931	2.35649*	-0.68355***	2.98988***	-0.4105***	2.25335***	0.01543*	0.49231*	0.07231**	-0.68623*	0.01033	1.53154
Pending home sales	-0.00301	0.15189	-0.04072	0.13567	-0.05453	0.29881	0.00433	0.02053	-0.01675	0.15366	-0.01676	-0.80029
Personal consumption	0.04548	-0.40212	-0.12306***	0.46241***	0.01365	-0.07518	0.00234	-0.00958	0.02166	0.048	-0.03182	0.06593
Personal income	-0.05495	0.14342	0.00497	-0.03505	0.14836	-0.94084	-0.01037	-0.2533*	-0.05332	0.26052	0.01097	-0.98839
Producer price index	-0.10278	0.85437	-0.06206	0.2268	0.03505	-0.32221	0.0107	-0.04785	0.02766	0.1277	-0.06587*	0.44089
Trade balance	-1.09678*	5.61848	0.00987	-0.7717	-0.28472*	0.23575	-0.02639	-0.50428	-0.67818***	0.80536**	-0.66975***	7.55158***
Announcements specific to commodity markets												
Crude Oil Weekly inventory	0.03025	-1.67095***										
Natural Gas Weekly inventory											-0.18997***	0.6371
Observations	167663		167808		167513		167800		99525		167472	
R ²	0.004087		0.003488		0.001728		0.000983		0.001166		0.001653	

This table presents estimates of eq. 6, $R_t^{t+\tau} = \alpha + \sum_{m=1}^{22} \gamma_m S_{m,t} + \delta X_{t,i} + \sum_{m=1}^{22} \theta_m (S_{m,t} \cdot X_t) + \beta R_{t-\tau}^t + \epsilon_t$ using the method proposed by Kurov et al. (2019) and financialization variable $MM_N LS_t$. The γ_m coefficients capture the instantaneous change in return when an announcement has just occurred and especially if that announcement was unanticipated. The coefficients θ_m capture the instantaneous change in return when an announcement has just occurred in conjunction with the level of financialization.

Table 59: Announcement (macro & commodity-specific) and financialization (SWAP-NLS) effects on futures returns (Kurov) - COVID Sample

Commodities	Crude Oil			Gold			Copper			Silver			Palladium			Natural Gas		
Announcements	γ_m	θ_m		γ_m	θ_m		γ_m	θ_m		γ_m	θ_m		γ_m	θ_m		γ_m	θ_m	
Macroeconomic News Announcements																		
Initial jobless claims	-0.3559	-1.5263		0.01394	0.02196		-0.00342	-2.17155***		-0.08446*	0.41894*		-0.1916***	1.05912***		-0.08847**	1.77686**	
ADP Employment	0.08035	0.06661		-0.31471**	-0.78958*		-0.11333**	-1.6728		0.22634***	-1.05459***		0.00289	-0.00433		-0.05779**	1.40793	
CB Consumer	0.54866	2.62593		-0.24794*	-0.7008*		0.0655	1.59409*		0.08546	-0.61999		0.02718	-0.20183		0.0479	0.1052	
Advance retail sales	0.83956***	4.05137***		-0.30872***	-0.94688***		0.03121*	0.27971		-0.03042	0.22433		0.02659	-0.15492		-0.01285	0.09216	
Building permit	0.44978**	2.31848**		-0.13443	-0.39083		-0.0493**	-0.60257*		-0.06394**	0.53905**		0.01289	-0.0059		0.16126***	-1.0246**	
Construction spending	0.27632	1.39045		0.23373	0.72075		-0.00773	0.60794		-0.14991**	0.8877**		0.05101	-0.12208		-0.11196	1.69267*	
Consumer credit	0.00461	0.08012		-0.04758	-0.12187		0.01797	0.32756*		0.03715	-0.19518		0.02984	-0.17111		-0.0298	0.23179	
Consumer price index	-0.05112	-0.32176		-0.57345***	-1.58847**		-0.12469***	-0.6901*		0.28822***	-1.98064***		0.0068	-0.4177*		-0.00893	-0.14206	
Durable goods orders	0.13207	0.71558		-0.38513***	-1.10042***		-0.03065	-0.83509		0.06604	-0.59511		0.01982	-0.40849		0.01972	-0.35887	
Existing home sales	-0.04459	-0.02126		0.11253	0.26883		-0.04172	-1.15384		0.09829*	-0.67851*		-0.01171	0.10709		0.11297	-0.25142	
Factory orders	0.18355	0.64725		0.25872	0.84187		-0.029	-0.14117		0.0834	-0.20274		-0.14787*	0.80132*		0.21908**	-0.23554	
GDP	0.46231***	2.30788***		0.19991	0.68373		0.05351	1.71279		0.05994**	-0.56015***		-0.052	0.00596		-0.05958*	0.2858	
Housing starts	-0.32851	-1.71555		-0.07149	-0.21937		-0.03948	0.03702		-0.01791	0.10276		-0.10283*	0.58656*		0.16249***	-1.56023***	
Industrial production	0.17043	1.00224		0.08398	0.37057*		-0.06373***	-0.34937		-0.08247*	0.46599		0.04412	-0.20798		-0.00941	-0.37177	
New home sales	-0.03078	-0.06343		0.18592	0.58193		-0.01074	0.53075		0.01912	-0.18141		0.01301	0.02973		0.02364	-0.82941*	
Non-farm employment	2.07613*	10.49944*		-3.88548***	-10.45671***		-0.14035**	-2.11552		0.39987**	-1.96803**		-0.38964**	1.75421**		-0.04663	1.68979	
Pending home sales	0.13424	0.54767		0.02888	0.11045		0.02128	0.43282		0.00606	0.00543		0.06637	-0.30888		-0.01983	-0.0278	
Personal consumption	0.23334	1.13462		-0.34704***	-0.96377***		0.01301	0.48689		-0.02546	0.13933		0.14246**	-0.56744		0.00804	-1.01067	
Personal income	0.48466	2.52886		-0.07014	-0.18887		-0.08014	-1.76992		-0.20808*	1.03538*		4e-04	-0.07478		-0.09644	3.03041*	
Producer price index	-0.37035	-1.91965		0.22676	0.72619		2e-04	0.30589		-0.0294	0.22461		0.04012	0.04467		-0.04055	-0.30514	
Trade balance	-2.43297	-9.82726		-0.2231	-0.3476		-0.22495**	0.04987		-0.31868*	1.15728		-0.17144	-1.82171***		-0.13828	-3.43949*	
Announcements specific to commodity markets																		
Crude Oil Weekly inventory	-0.71319***	-2.29368***														-0.13552**	-0.31667	
Natural Gas Weekly inventory																		
Observations	167663	167808		167513	167800		0.001651	0.001399		99525	167472		0.001579	0.001734				
R ²	0.00438	0.00342																

This table presents estimates of eq. 6, $R_{t+\tau}^{i+\tau} = \alpha + \sum_{m=1}^{22} \gamma_m S_{m,t} + \delta X_{t,i} + \sum_{m=1}^{22} \theta_m (S_{m,t} \cdot X_t) + \beta R_{t-\tau}^i + \epsilon_t$ using the method proposed by Kurov et al. (2019) and financialization variable $SWAP_{NLS,t}$. The γ_m coefficients capture the instantaneous change in return when an announcement has just occurred and especially if that announcement was unanticipated. The coefficients θ_m capture the instantaneous change in return when an announcement has just occurred in conjunction with the level of financialization.

Table 60: Announcement (macro & commodity-specific) and financialization (MM-NLS) effects on futures conditional variance - COVID Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m
Macroeconomic News Announcements												
Initial jobless claims	-0.04461	2.85159*	-0.00467	-0.05895	0.15242***	-0.16088	0.01131	0.0023	0.08837***	-0.09377	-0.00605	0.21895
ADP Employment	-0.34572	4.05873**	0.01157	-0.11669	0.05935	0.18762	0.06509***	-0.05024	-0.08643*	-0.20231	0.006	0.14602
CB Consumer	-0.49745*	1.3217	0.09255***	-0.17445	0.033	-1.30168***	0.00077	-0.05129	0.05362	-0.20067	-0.02037	0.32092
Advance retail sales	-0.18724	-0.76763	0.07227**	-0.53535***	0.34259***	-0.62714**	0.02209	-0.22841***	0.01804	-0.26755	0.04779	0.50548
Building permit	0.10048	1.66375	-0.09165***	0.14266	0.10536**	0.33833	0.02134	0.06065	0.07337	-0.07325	0.04532	-0.4211
Construction spending	-0.19798	0.62185	0.01384	0.02905	-0.03106	0.10504	-0.0047	0.06039	0.00351	0.21481	0.05824*	0.03839
Consumer credit	-0.09134	1.2164	-0.00171	0.00941	0.02411	-0.86118***	-0.01479	-0.26289***	0.0054	0.13574	0.01831	0.1331
Consumer price index	-0.16864	2.371	0.09632***	-0.4022**	0.25226***	0.04154	0.13703***	0.14927*	-0.0415	-0.13397	0.03385	-0.36319
Durable goods orders	-0.33507	-3.41535*	0.08977***	-0.29773*	0.03393	-0.50163*	-0.0334*	-0.06481	0.06564	-0.19562	-0.05252	0.06643
Existing home sales	0.56294**	1.05599	-0.00734	0.18055	0.13902***	-0.09197	0.05677***	-0.10169	0.21109***	-0.12753	0.08619***	-0.60224
Factory orders	-0.08984	1.60278	-0.00245	0.27924	0.03794	0.72946**	0.03449**	0.22021**	0.03417	0.1381	0.05311*	-0.39455
GDP	-0.23953	-0.41313	0.01217	0.5264***	-0.03592	-0.69722***	-0.02595	-0.2736***	-0.01096	-0.2769	-0.04993	0.0364
Housing starts	0.0599	1.01861	-0.0897***	0.19485	0.11759**	0.16098	0.0276	-0.06027	0.07192	-0.3868*	0.06048*	0.68109
Industrial production	-0.17177	-3.74853***	-0.04685	-0.3567***	-0.06541	-0.53071***	-0.01066	-0.06344	0.10981**	0.0315	-0.03748	-0.14918
New home sales	-0.01003	0.17466	0.08614***	-0.57164***	0.1953***	0.03185	-0.02271	-0.00031	0.03605	0.3872**	-0.00739	0.72281*
Non-farm employment	0.05604	3.04568	0.28587***	-0.41916**	0.30708***	0.00215	0.12292***	0.10831	0.00414	0.23142	0.0035	0.36589
Pending home sales	-0.40328	-0.36436	0.11405***	-0.34236*	0.03729	-0.29147	-0.00213	-0.07714	0.0475	-0.06213	0.06356*	-2.0588***
Personal consumption	0.03999	-2.13154	0.08202**	-0.28124*	0.09221	-0.17986	0.00857	-0.04301	0.07635	-0.09191	0.13395***	-0.64605
Personal income	0.29453	-0.5006	0.07845***	-0.74149***	0.08435	-0.51294*	0.00589	0.00579	0.08636*	-0.41902*	0.06267*	0.26214
Producer price index	0.09115	-0.1613	0.09431***	-0.52717**	0.18854***	-0.68457**	-0.00799	0.01655	0.12402**	-0.19304	-0.05209	0.16588
Trade balance	0.08689	-1.05789	0.12133***	0.0001	0.15697***	0.0001	0.02785	0.0001	0.12659***	0.0001	0.01636	0.97422***
Announcements specific to commodity markets												
Crude Oil Weekly inventory	0.31257	0.0001									0.53582***	0.0001
Natural Gas Weekly inventory												
Observations	167663		167808		167513		167800		99525		167472	
R ²	0.036079		0.110085		0.072735		0.087602		0.04779		0.135707	

This table presents estimates of eq. 10 using financialization variable NN_NLS_t . The equation is $\sigma_t^2 = \alpha_0 + \alpha_1 \sigma_{t-1}^2 + \alpha_2 \varepsilon_t^2 + \sum_{m=1}^{22} \Phi_m D_{m,t} + \beta X_{i,t} + \sum_{k=1}^n \phi_k I_{k,t} + \sum_{h=1}^{23} \rho_h D_{h,t}$ where $I_{k,t} = D_{m,t} \cdot X_{i,t}$ and $D_{m,t}$ is a macro announcement dummy variable for release m . The Φ_m coefficients capture the instantaneous change in the conditional variance when an announcement has just occurred. The ϕ_m coefficients capture the conditional variance when an announcement has just occurred in conjunction with the level of financialization.

Table 61: Announcement (macro & commodity-specific) and financialization (SWAP-NLS) effects on futures conditional variance - COVID Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m
Macroeconomic News Announcements												
Initial jobless claims	-0.02922	4.03858	-0.00383	-0.44581*	0.13311***	0.68878	0.01537	0.61188**	0.08235**	0.3035	-0.00311	-0.38407
ADP Employment	0.89022	-1.01674	-0.14995*	-0.24589	0.06432**	-0.03518	-0.03627	0.12394	-0.15721*	0.71733*	0.04367	-0.88879**
CB Consumer	-0.16354	2.14791	-0.01169	0.24884	0.0654**	1.38311***	-0.02742	0.18772	-0.11676	0.71702	0.05968	0.12444
Advance retail sales	0.44938	-0.51159	0.12493	-0.71539*	0.18362***	0.93335**	-0.0161	0.80474***	-0.14029	0.38779	0.04598	0.72141*
Building permit	-0.11462	1.52827	-0.2366*	0.13656	0.04223	-0.36732	-0.13936***	-0.15939	-0.03245	0.18738	-0.0072	0.68219
Construction spending	0.35162	-0.3077	0.08577	0.04062	0.01138	0.2621	0.02996	-0.18551	-0.04229	-0.26997	-0.00935	0.07279
Consumer credit	-0.06546	-0.55449	0.01866	-1.87127***	0.05736*	0.01452	0.02409	2.08176***	0.08719	0.01319	0.01232	0.49723
Consumer price index	-0.11343	1.27139	-0.5234***	-0.22151	0.11112***	-0.57925	-0.25742***	-0.01637	-0.02735	0.16253	-0.01576	0.43095
Durable goods orders	0.25844	-3.94367	-0.05658	0.27322	0.01283	0.81324**	-0.00975	-0.03792	0.01667	0.8857**	-0.09599*	-0.18731
Existing home sales	-0.77611	4.12467	0.13657	-0.31927	0.0933***	-0.22595	0.05463	0.31807	0.01878	0.0258	0.10396**	0.92352**
Factory orders	0.9199	1.70409	-0.07701	-0.03624	0.01073	-0.67484	-0.03092	-0.44596*	0.01082	-0.22664	-0.03744	1.0731**
GDP	0.34501	-1.88465	0.04424	-0.64959*	0.06082*	1.02371***	0.08284*	1.10052***	0.05347	0.40694	-0.15514***	0.946**
Housing starts	-0.40274	0.0779	-0.21414*	-0.03151	0.04666	-0.53977	-0.18703***	0.05743	-0.03861	0.80121*	-0.0186	-0.43125
Industrial production	-0.0123	-2.49043	-0.02319	0.20445	-0.06506**	0.25795	-0.02684	0.15867	-0.08525	0.04713	0.00632	0.29616
New home sales	-0.07277	1.40281	0.4137***	1.62105***	0.16036***	0.36746	0.02375	0.47451*	0.0387	-0.38979	-0.01679	-0.90365**
Non-farm employment	0.38153	-0.79927	0.73582***	0.87849***	0.33138***	1.02249**	0.04335	-0.45437*	0.1309	-0.34504	0.09655*	0.6631
Pending home sales	-0.16135	2.17731	0.33625***	-0.09161	0.08945***	-0.37429	0.0886**	0.17491	0.1461*	0.30697	0.01209	2.49867***
Personal consumption	0.4467	-0.26628	-0.0097	-0.25217	0.01905	-0.42262	-0.03202	0.21254	0.00779	0.2457	-0.10497**	2.07186***
Personal income	-0.05879	-3.6405	-0.05739	1.06157***	0.03155	1.21226***	-0.03398	-0.03706	0.02667	0.69591	-0.11986**	-0.22351
Producer price index	-0.7306	3.86034	0.40256***	-0.23286	0.1636***	1.00912**	-0.00112	0.23935	-0.07333	0.37691	-0.02853	-0.98772**
Trade balance	0.88337	0.15135	-0.05401	0.0001	0.08634***	0.0001	-0.0093	0.0001	0.02746	0.0001	0.10671**	-0.02417
Announcements specific to commodity markets												
Crude Oil Weekly inventory	0.18957	0.0001									0.55306***	0.0001
Natural Gas Weekly inventory												
Observations	167663		167808		167513		167800		99525		167472	
R ²	0.031995		0.09131		0.073455		0.085618		0.04391		0.135931	

This table presents estimates of eq. 10 using financialization variable $SWAP_NLS_t$. The equation is $\sigma_t^2 = \alpha_0 + \alpha_1 \sigma_{t-1}^2 + \sum_{m=1}^{22} \Phi_m D_{m,t} + \beta X_{i,t} + \sum_{k=1}^n \phi_k I_{k,t} + \sum_{h=1}^{23} \rho_h D_h$ where $I_{k,t} = D_{m,t} \cdot X_{i,t}$ and $D_{m,t}$ is a macro announcement dummy variable for release m . The Φ_m coefficients capture the instantaneous change in the conditional variance when an announcement has just occurred. The ϕ_m coefficients capture the conditional variance when an announcement has just occurred in conjunction with the level of financialization.

Table 62: Announcement (macro & commodity-specific) and financialization (MSCT) effects on futures returns (Kurov) - COVID Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m
Announcements												
Macroeconomic News Announcements												
Initial jobless claims	0.13198	-0.89167	0.75825***	-2.38471***	-0.44239***	1.88489***	-0.03294	0.09596	0.05016	-0.23826	-0.09469	0.51222
ADP Employment	0.3105	-1.19895	-0.89875***	2.69649***	0.95103***	-3.61079***	-0.77417***	2.57231***	-0.0583	0.16649	-0.62045*	2.70332*
CB Consumer	-0.19138	1.10809	-0.5967***	1.68458***	0.12454	-0.35178	0.13403	-0.39036	-0.05893	0.14392	-0.28734	1.35531
Advance retail sales	-0.0938	0.63296	-0.31652***	0.88684***	-0.39136***	1.39529***	0.03401	-0.08693	0.08863	-0.2599	-0.03563	0.11417
Building permit	0.10277	-0.33505	-0.1686	0.45503	-0.02434	-0.00364	0.18963	-0.49737	-0.45458*	1.185**	-0.1847	1.0412
Construction spending	0.97804***	-5.22214***	0.11672	-0.41037	-0.01243	-0.05033	-0.0398	0.16554	-0.40634	1.17915	0.13166	-0.61341
Consumer credit	-0.0502	0.21911	0.03153	-0.10108	0.08747	-0.29231	-0.0825	0.24368	-0.05262	0.13832	-0.11739	0.43156
Consumer price index	0.24328	-1.53437*	-1.37437***	3.91773***	1.9462***	-6.08094***	-0.35916*	0.90777	-0.01306	-0.08622	-0.42558	1.46361
Durable goods orders	0.0906	-0.57533	0.3926	-1.19827	0.5758*	-1.90841*	0.25047	-0.81826	-0.31315	0.70768	0.43701	-1.66876
Existing home sales	0.27546	-1.75493	0.49924	-1.29635	0.06082	-0.19358	-0.40825**	1.15617**	0.13995	-0.35373	0.33952	-0.93811
Factory orders	0.36928	-1.73781	-0.41132	1.09827	-0.27811	0.84983	0.12578	-0.2229	0.13311	-0.38171	0.40911	-0.8182
GDP	0.27304**	-1.44263**	-0.2203	0.52119	-0.67243***	1.98282***	-0.11596	0.24842	-0.45861***	1.05238**	-0.10297	0.23893
Housing starts	0.2868*	-1.75826*	-0.0507	0.13799	-0.0275	-0.03906	-0.19999	0.55627	0.10733	-0.33886	0.26675	-0.90836
Industrial production	-0.08836	0.30044	-0.10637	0.20564	-0.17936	0.38491	0.02343	-0.10811	-0.25494	0.68852	-0.15077	0.48996
New home sales	-0.27019	1.44591	-0.09014	0.22751	-0.66304**	1.8802**	-0.08688	0.22063	0.06537	-0.11141	0.14313	-0.69484
Non-farm employment	-0.03247	0.36723	-3.45276***	10.23516***	0.32525	-1.39517	0.63869**	-1.98084**	1.57672***	-4.37915***	-0.63582*	2.86028*
Pending home sales	-0.10776	0.66155	0.18411	-0.54798	0.07994	-0.24176	0.09694	-0.27873	0.03917	-0.08124	0.03792	-0.24007
Personal consumption	0.11213	-0.69655	-0.30092***	0.93831***	0.1253	-0.47127	0.25741	-0.76884	-0.01565	0.1265	0.31231	-1.52086
Personal income	0.06222	-0.45753	-0.45649**	1.40626**	0.13947	-0.53468	0.03663	-0.12869	-0.21351	0.60211	-0.34551	1.63323
Producer price index	-0.09906	0.65089	-0.34361*	1.03072**	0.42331***	-1.44845***	-0.21304	0.62436	0.14048	-0.23972	-0.11209	0.17695
Trade balance	-0.72113	2.44951	-1.00928*	2.45073*	-4.54179***	12.69701***	-1.10271	2.83246	0.91093	-3.8825	6.8615***	-28.40156***
Announcements specific to commodity markets												
Crude Oil Weekly inventory	0.00162	-1.23055**									0.62771**	-3.12701***
Natural Gas Weekly inventory											167472	
Observations	167663	0.004081	167808	0.00369	167513	0.002518	167800	0.000935	99525	0.001136		0.001678
R ²												

This table presents estimates of eq. 6, $R_t^{t+\tau} = \alpha + \sum_{m=1}^{22} \gamma_m S_{m,t} + \delta X_{t,j} + \sum_{m=1}^{22} \theta_m (S_{m,t} \cdot X_t) + \beta R_{t-\tau}^t + \epsilon_t$ using the method proposed by Kurov et al. (2019) and financialization variable $MSCT_t$. The γ_m coefficients capture the instantaneous change in return when an announcement has just occurred and especially if that announcement was unanticipated. The coefficients θ_m capture the instantaneous change in return when an announcement has just occurred in conjunction with the level of financialization.

Table 63: Announcement (macro & commodity-specific) and financialization (WT) effects on futures returns (Kurov) - COVID Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m
Macroeconomic News Announcements												
Initial jobless claims	-3.36421*	3.1362*	1.19264***	-1.133***	-1.7313***	1.56843***	-0.12121	0.09174	0.30378	-0.26496	0.32524	-0.26608
ADP Employment	2.47917	-2.23049	-1.04846***	0.96392***	2.88399***	-2.54596***	-0.10564	0.09452	0.13276	-0.09554	-1.95149	1.55688
CB Consumer	-2.63441	2.44403	-0.89349***	0.78027***	0.24099	-0.18939	0.96701*	-0.7408*	-0.04715	0.03157	-0.84812	0.70505
Advance retail sales	-2.14253	2.01337	-0.76226***	0.66498***	-1.39058***	1.19211***	0.08776	-0.06178	0.19619	-0.15052	0.83378	-0.66819
Building permit	1.41552	-1.27471	-0.08942	0.07252	0.17615	-0.16391	0.12099	-0.08309	-0.98573**	0.7384**	-3.1797**	2.5572**
Construction spending	13.77231***	-12.77697***	0.11686	-0.12555	-0.20135	0.15122	-0.5141	0.39409	-0.20647	0.18348	1.98614	-1.59548
Consumer credit	-0.55325	0.50376	0.10694	-0.09633	0.12592	-0.10659	0.10524	-0.07721	-0.47863	0.37733	-0.17425	0.12762
Consumer price index	-1.85801	1.75023	-3.07316***	2.63087***	3.03931***	-2.56644***	-1.72311***	1.2628***	-0.19342	0.1108	-2.19912	1.66722
Durable goods orders	-2.659	2.42914	-0.96588**	0.86621***	1.43817**	-1.1886**	1.2544**	-0.98882**	-0.74974	0.54201	1.38562	-1.06858
Existing home sales	1.43681	-1.36897	0.60543	-0.49574	2.06593**	-1.6931**	-2.42558***	1.86813***	0.16488	-0.12407	4.5182*	-3.46046*
Factory orders	4.89235	-4.49028	-0.41963	0.34323	-0.22881	0.17208	0.07568	-0.02006	-0.1355	0.09571	-1.50027	1.33999
GDP	2.59298**	-2.38546**	-1.01106**	0.90265***	-0.66001	0.51836	0.36002*	-0.28981*	-0.18863	0.10386	-0.44397	0.31361
Housing starts	-1.6479	1.55633	0.01502	-0.01454	-0.05043	0.00845	0.15992	-0.12389	0.13411	-0.11992	-1.55562	1.24567
Industrial production	0.0922	-0.12081	-0.41758**	0.32955**	-0.45425	0.32669	0.61398	-0.48181	-0.6047	0.46185	0.61485	-0.51343
New home sales	-2.7621	2.55763	-0.72644**	0.61667**	-1.29869***	1.02612***	-0.15849	0.11476	0.01932	1e-05	0.26586	-0.231
Non-farm employment	11.26608	-10.39516	-5.72684***	5.1926***	2.31243***	-2.06409***	1.24419**	-0.88215**	0.90338	-0.64785	-2.02813	1.63544
Pending home sales	-2.15399	2.01476	0.15336	-0.14427	0.40143	-0.3286	0.27123	-0.20291	0.07083	-0.04594	0.38348	-0.3178
Personal consumption	1.46542	-1.3783	-0.47815***	0.44587***	0.5288	-0.45934	0.26953	-0.19813	-0.12627	0.11914	0.43755	-0.38371
Personal income	6.60825	-6.15324	0.51008	-0.46839	0.42935	-0.38285	-1.88338**	1.37558**	-1.75527	1.33503	-1.00585	0.83333
Producer price index	2.06636	-1.90368	-0.46209*	0.42447*	1.3869***	-1.17081***	-0.49795	0.37793	0.65511*	-0.45953	-1.58706	1.19422
Trade balance	-3.63536	3.09571	-0.61123	0.42016	-5.7307***	4.37109***	-2.03929	1.48377	-2.77008*	1.72891	-3.28218	2.27926
Announcements specific to commodity markets												
Crude Oil Weekly inventory	1.63868*	-1.72555**									4.07984***	-3.32498***
Natural Gas Weekly inventory											167472	
Observations	167663	167808	167808	167513	167800	167800	167800	167800	99525	99525	167472	
R ²	0.004053	0.004118	0.004118	0.002548	0.001073	0.001073	0.001073	0.001073	0.001149	0.001149	0.001692	

This table presents estimates of eq. 6, $R_t^{t+\tau} = \alpha + \sum_{m=1}^{22} \gamma_m S_{m,t} + \delta X_{t,i} + \sum_{m=1}^{22} \theta_m (S_{m,t} \cdot X_t) + \beta R_{t-\tau}^t + \epsilon_t$ using the method proposed by Kurov et al. (2019) and financialization variable WT_t . The γ_m coefficients capture the instantaneous change in return when an announcement has just occurred and especially if that announcement was unanticipated. The coefficients θ_m capture the instantaneous change in return when an announcement has just occurred in conjunction with the level of financialization.

Table 64: Announcement (macro & commodity-specific) and financialization (PCA) effects on futures returns (Kurov) - COVID Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m
Macroeconomic News Announcements												
Initial jobless claims	-0.02432**	-0.01818	0.12506***	-2.80729***	0.17005***	-2.79627***	-0.0171	-1.80177***	-0.04697*	0.50617	0.0213	0.00395
ADP Employment	0.10493**	-0.01992	-0.07145***	0.03843***	-0.20312***	0.07302***	0.05359**	-0.00743	0.00293	-0.01197	0.06487	0.05085*
CB Consumer	-0.00014	0.0173	-0.01156	-0.03514***	0.01126	-0.12638***	-0.01154	0.01428	-0.00428	-0.00635	0.05444	0.01849
Advance retail sales	0.01675	0.00934	0.00999	-0.02615***	0.05658***	-0.00972	0.00271	0.01182	-0.00801	0.00407	-0.01226	-0.0054
Building permit	0.04472***	-0.00473	-0.00506	0.02308***	-0.02296	0.06065***	0.01689*	-0.0046	-0.00525	-0.01228	0.08097**	0.02061
Construction spending	0.07403	-0.08007***	-0.02819*	0.00141	-0.01867	-0.00088	-0.00176	-0.01373*	0.0432	0.04773**	-0.02909	-0.01744
Consumer credit	-0.01203	0.00357	-0.00482	-0.00376	-0.00308	0.00661	0.00403	-0.01316	0.0151	0.03158	-0.00888	0.00622
Consumer price index	0.0237	0.0227*	0.02254	-0.00306	-0.08259***	-0.00465	-0.03278**	0.00641	-0.04731***	0.01463	-0.06911	0.03523
Durable goods orders	-0.01326	-0.00519	-0.03861**	-0.09163***	-0.00732	-0.11911***	-0.0181	0.02209	-0.03421	0.00352	0.01278	-0.02896
Existing home sales	-0.02893	-0.02409	0.03032*	-0.03031***	0.00957	-0.05879**	-0.01252	0.00328	0.00121	0.03252	0.10149*	-0.04166
Factory orders	0.06701	-0.02383	-0.0214	-0.01821	-0.01981	-0.0817**	0.05127*	0.01387	-0.01113	-0.01429	0.20189***	-0.00073
GDP	-0.02344	0.01999**	-0.03597***	0.01002	-0.03173	0.00734	-0.02807***	0.00406	-0.05014**	-0.0029	-0.04468	0.01072
Housing starts	0.01845	0.02643*	-0.00186	-0.03386***	-0.04042**	0.02865	-0.00735	0.02018**	-0.02342	0.01822	0.03539	-0.00961
Industrial production	0.03643**	0.00465	-0.03529***	-0.00053	-0.05792***	0.00069	-0.015	0.01881	0.00841	-0.00974	-0.03503	-0.00202
New home sales	-0.01988	0.02155	-0.01107	-0.00021	-0.05154**	-0.01592	-0.00762	0.01283	0.02024	-0.00408	-0.03319	-0.01629
Non-farm employment	0.02498	0.00862	-0.2769***	0.02188**	-0.17649***	0.04451**	0.06183	0.0016	0.02**	-0.00112	0.08142	0.04914
Pending home sales	0.00688	0.01007	-0.01427	-0.16695***	0.00245	-0.09205***	0.00528	0.01944	0.0086	-0.07946**	-0.02308	-0.00338
Personal consumption	-0.00795	-0.0116	-0.03914***	-0.00496	-0.03188	-0.01156	-0.00356	-0.00346	0.03274	-0.00329	-0.06953*	-0.02143
Personal income	-0.01321	-0.00959	-0.02591	-0.01454***	-0.03079	-0.02411*	-0.04359	-0.0041	0.02955	0.00582	0.07648	0.03243
Producer price index	0.01504	0.00858	-0.03052**	-0.01257	-0.03537	-0.0158	0.00541	-0.01962	0.04519*	0.04732	-0.06727*	0.00949
Trade balance	0.29865***	0.03278	-0.122***	-0.01377*	-0.41798***	-0.05178***	-0.11417**	0.00071	-0.56894***	-0.01681	-0.36628**	-0.363**
Announcements specific to commodity markets												
Crude Oil Weekly inventory	-0.21132***	-0.01899***									-0.01789	0.01571
Natural Gas Weekly inventory											167472	
Observations	167663	167808	167808	167513	167800	167800	167800	167800	99525	0.001077	167472	
R ²	0.004106	0.00411	0.00411	0.002538	0.000898	0.000898	0.000898	0.000898	0.001077	0.001355		

This table presents estimates of eq. 6, $R_t^{t+\tau} = \alpha + \sum_{m=1}^{22} \gamma_m S_{m,t} + \delta X_{t,i} + \sum_{m=1}^{22} \theta_m (S_{m,t} \cdot X_t) + \beta R_{t-\tau}^t + \epsilon_t$ using the method proposed by Kurov et al. (2019) and financialization variable PCA_t . The γ_m coefficients capture the instantaneous change in return when an announcement has just occurred and especially if that announcement was unanticipated. The coefficients θ_m capture the instantaneous change in return when an announcement has just occurred in conjunction with the level of financialization.

Table 65: Announcement (macro & commodity-specific) and financialization (MSCT) effects on futures conditional variance - COVID Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m
Macroeconomic News Announcements												
Initial jobless claims	-0.04792	5.35099**	0.10316*	0.43076	0.39597***	-0.20563	0.13925*	-0.10069	0.03985	0.42454	-0.07999	1.75939
ADP Employment	0.89457**	-4.17518*	-0.15413	-0.13971	0.09709	0.49655	0.10108	-0.47949	-0.26053	-0.14685	-0.4362	-0.40491
CB Consumer	-0.67057*	-0.4998	0.12167	0.76361**	-0.09214	-0.83315*	0.16233	0.27873	0.08557	0.1697	0.08551	-0.55753
Advance retail sales	0.07813	-3.05594	0.23491*	-0.61806*	0.37779**	-0.73095	-0.08461	-0.94465**	-0.07911	-1.36672*	0.19574	0.14653
Building permit	0.52344	2.78857	0.22759*	-0.46421	0.2285	1.34952**	0.32362**	0.31343	0.55941**	0.65837	0.01621	-0.56422
Construction spending	-0.45886	-1.09549	0.20715*	-0.0031	-0.40483**	-0.02147	-0.10679	-0.12288	-0.26027	0.59527	0.19344	0.43975
Consumer credit	0.18405	-2.04703	0.0063	2.06388**	0.05027	2.00485**	0.03681	-1.39891**	-0.19596	0.66332	-0.09293	-6.19985***
Consumer price index	0.34584	0.59177	0.64958**	0.47638	-0.55225**	2.28717***	0.59538***	-0.0725	-0.28343	1.12431	1.63878***	2.31344*
Durable goods orders	-0.11604	0.98463	-0.15349	-1.86794***	-0.68762***	-1.23594**	0.01312	0.53445	-0.38397	-5.10164***	-0.64919**	-1.08551
Existing home sales	-0.0751	2.01052	0.72093***	0.39518	0.4476***	1.61051***	-0.14119	-0.56729	2.12678***	-0.38261	0.36475	3.28727**
Factory orders	-0.2993	-0.61284	-0.1116	-0.02826	-0.49927***	-2.61031***	0.2215	0.14953	0.16353	-0.18674	-0.78632**	2.66912
GDP	0.08616	-3.56678	0.06728	-0.65895*	0.94125***	-0.76332	-0.04329	-1.20654***	0.07801	-1.48139**	-0.74085*	0.95236
Housing starts	0.61837	2.65335	0.24271*	-0.30086	0.23863	-0.49043	0.4161***	-0.43399	0.60065**	-0.13591	-0.18099	-0.41409
Industrial production	-0.49537	0.42368	0.09504	-0.54124**	0.12139	-0.57481	0.13532	-0.40983	0.09614	1.04834*	0.07228	-0.39298
New home sales	0.10552	0.17094	0.18756	3.37***	-0.04123	4.89347***	0.23042	-0.29786	0.24871	-0.34879	-0.21056	-3.25416**
Non-farm employment	0.05173	1.06281	1.0308***	-0.58976*	-1.26326***	0.38907	0.22801	-0.33884	0.18867	-0.35144	0.84295**	1.59485
Pending home sales	-0.17363	-0.93349	0.17398	0.93912**	-0.08739	2.05375***	0.13346	-0.60371	0.214	1.19662	-0.33653	6.67818***
Personal consumption	0.14249	-1.68861	0.3155**	-0.91741***	-0.61373***	0.80232	0.21088	-0.73104	-0.39233	0.34418	-1.61524***	4.00934***
Personal income	0.29482	-0.68979	0.30039***	-1.43267***	-0.20334	-2.0129***	0.25897	0.34591	-0.0627	-0.87025	-0.96558***	-0.69251
Producer price index	0.14855	2.35352	0.56147***	-1.17659***	0.74178***	0.25623	-0.12924	0.08417	0.37145	0.30132	0.13116	0.76268
Trade balance	-0.34125	1.70386	-0.4***	0.0001	-0.04734	0.0001	0.00052	NA	-0.01634	0.0001	-0.17483	-1.91834***
Announcements specific to commodity markets												
Crude Oil Weekly inventory	-0.13808	0.0001									1.03816***	0.0001
Natural Gas Weekly inventory												
Observations	167663		167808		167513		167800		99525		167472	
R^2	0.025493		0.118957		0.082838		0.083015		0.055937		0.138069	

This table presents estimates of eq. 10 using financialization variable $MSCT_t$. The equation is $\sigma_t^2 = \alpha_0 + \alpha_1 \sigma_{t-1}^2 + \alpha_2 \epsilon_t^2 + \sum_{m=1}^{22} \Phi_m D_{m,t} + \beta X_{i,t} + \sum_{k=1}^n \phi_k I_{kt} + \sum_{h=1}^{23} \rho_h D_{h,t}$ where $I_{kt} = D_{m,t} \cdot X_{i,t}$ and $D_{m,t}$ is a macro announcement dummy variable for release m . The Φ_m coefficients capture the instantaneous change in the conditional variance when an announcement has just occurred. The ϕ_m coefficients capture the conditional variance when an announcement has just occurred in conjunction with the level of financialization.

Table 66: Announcement (macro & commodity-specific) and financialization (WT) effects on futures conditional variance - COVID Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m
Macroeconomic News Announcements												
Initial jobless claims	0.90234	4.69317	0.13375	0.16318	0.32407*	0.56894*	0.29818	-0.16975	0.09298	-0.29505	-0.51513	1.85494**
ADP Employment	-5.02155	-2.43638	-0.18838	0.04312	-0.66027*	0.24329	0.28988	0.06928	0.29431	-0.77474	-2.3471**	0.28136
CB Consumer	2.67327	0.76572	0.02153	0.45002**	-0.2283	0.18631	-0.09827	0.06361	1.04499	0.05995	-0.37555	-0.83378
Advance retail sales	-0.83192	-3.07631	0.48176**	-0.54455***	-0.11659	-0.03585	-0.07035	-0.51624	-0.09235	-1.03851*	1.11305	-0.26131
Building permit	3.29937	4.57055	0.63645***	-0.12829	0.03707	0.37977	0.67249	-0.1371	1.40787**	-0.40229	0.38522	-1.66873**
Construction spending	-4.89781	0.05851	0.18827	0.02772	-0.43131	0.07699	0.18457	-0.16742	0.5261	0.37469	2.16807**	0.45289
Consumer credit	-0.06807	-1.15069	-0.02799	0.80666***	-0.05059	1.23659***	0.2148	0.0172	-0.45708	-0.14485	-0.55702	-0.68429
Consumer price index	1.23508	0.43547	0.84622***	0.17443	-1.41541***	0.9216***	0.08242	-0.70168**	0.16565	0.39643	0.913	1.10222
Durable goods orders	-0.48101	-5.9134	-0.18468	-0.68473***	-1.07789***	-0.22559	0.91293**	-0.00832	-0.47367	-2.28506***	-1.46024	-0.37853
Existing home sales	6.43577	2.42869	0.8414***	-0.03061	0.32625	0.70996**	0.05941	-0.38728	3.18923***	0.13082	0.56905	1.12255
Factory orders	-2.56522	0.18485	0.06617	-0.02817	-0.84208**	-1.14489***	0.53417	-0.73622**	-0.15677	-0.19726	-1.38336	-0.21906
GDP	-0.21896	-3.80825	0.09052	-0.52845***	1.49585***	-0.02796	0.98098**	-0.55202*	0.26215	-1.12943**	0.21583	-0.21153
Housing starts	4.09237	3.13431	0.6181***	-0.10152	0.02718	-0.50461	0.71988*	-0.00173	1.52519**	-0.2354	0.32953	0.20381
Industrial production	-3.40358	-0.0107	0.10523	-0.30852**	0.57502	-0.10948	-0.01577	0.17944	0.35644	0.61771*	-0.28967	-0.72684
New home sales	1.70039	1.49269	0.26266	1.69666***	-0.38078	2.45859***	0.44581	0.23965	0.21727	0.29262	-0.30483	-1.06612
Non-farm employment	-1.52665	-0.44119	1.78254***	-0.45409***	-2.66897***	0.59997**	-0.19362	-0.29233	-0.33147	-0.04826	1.37087	1.33592
Pending home sales	0.48551	-0.24215	0.4887**	-0.42411**	-0.69108*	0.85839**	0.39882	0.11557	0.14312	0.29646	-1.62933	0.10885
Personal consumption	0.23959	-2.05128	0.47086**	-0.37923**	-0.99978**	0.2291	-0.15718	0.01339	-0.32266	0.4041	-0.04841	0.35707
Personal income	2.2042	-2.06842	0.41195**	-0.65656***	-0.22546	-0.86522***	-0.0175	0.08109	-0.46108	-0.48921	-0.39771	-0.29528
Producer price index	2.26004	6.05206	0.80469***	-0.5554***	1.14565***	0.46378	-0.11453	0.32208	0.68385	0.51727	0.32866	1.11567
Trade balance	-6.45411	3.49991	0.6189***	0.0001	-0.52819	0.0001	-0.39561	0.00001	-0.58196	0.0001	-1.39912	0.78013*
Announcements specific to commodity markets												
Crude Oil Weekly inventory	-3.60697	0.0001									-0.44061	0.0001
Natural Gas Weekly inventory												
Observations	167663		167808		167513		167800		99525		167472	
R ²	0.0232279		0.118801		0.078053		0.082682		0.046268		0.142896	

This table presents estimates of eq. 10 using financialization variable WT_t . The equation is $\sigma_t^2 = \alpha_0 + \alpha_1 \sigma_{t-1}^2 + \alpha_2 \epsilon_t^2 + \sum_{m=1}^{22} \Phi_m D_{m,t} + \beta X_{i,t} + \sum_{k=1}^n \phi_k I_{k,t} + \sum_{h=1}^{23} \rho_h D_{h,t}$ where $I_{k,t} = D_{m,t} \cdot X_{i,t}$ and $D_{m,t}$ is a macro announcement dummy variable for release m . The Φ_m coefficients capture the instantaneous change in the conditional variance when an announcement has just occurred. The ϕ_m coefficients capture the conditional variance when an announcement has just occurred in conjunction with the level of financialization.

Table 67: Announcement (macro & commodity-specific) and financialization (PCA) effects on futures conditional variance - COVID Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m	Φ_m	ϕ_m
Macroeconomic News Announcements												
Initial jobless claims	0.00877	0.06854**	0.04889***	0.00632	0.10143***	0.02561*	0.01633***	-0.00186	0.08097***	-0.00257	-8e-04	0.03698
ADP Employment	0.03197	0.05389	0.00108	0.00335	0.03112	0.01241	0.06538***	-0.00894	-0.09486**	-0.02727	0.01188	-0.00604
CB Consumer	0.05354	-0.00523	0.07158***	0.01573**	0.06761***	0.0089	-0.00622	-0.00047	0.02592	0.00496	-0.01753	-0.01483
Advance retail sales	-0.00851	-0.04267	0.04067***	-0.01819***	0.10993***	-0.00152	0.0139	-0.02434**	-0.01311	-0.05964**	0.05261	0.00172
Building permit	-0.00704	0.0427	0.00467	-0.00389	-0.00659	0.01853	-0.00975	0.00774	0.03353	-0.0025	0.05338*	-0.01865
Construction spending	0.02353	-0.01352	0.03937***	0.00092	0.0303	0.00426	0.00374	0.00524	-0.00435	0.02602	0.04897	0.01006
Consumer credit	-0.00584	-0.02756	0.00412	0.02848***	0.04301**	0.05662***	-0.00637	-0.03798***	0.03674	0.0069	0.019	-0.06251
Consumer price index	-0.00862	0.00919	0.09025***	0.00549	0.08811***	0.04065***	0.09955***	0.01802*	-0.02377	0.03608	0.05494	0.0411*
Durable goods orders	-0.0132	0.00783	0.01782*	-0.02205***	0.04292**	-0.0094	-0.01289	-0.00039	0.05048	-0.18229***	-0.05984*	-0.01398
Existing home sales	0.09568*	0.02457	0.04677***	-0.00119	0.05161**	0.03212**	0.04829***	-0.00778	0.16009***	-0.00301	0.08823***	0.05824**
Factory orders	0.04917	-0.00674	0.03061***	-0.00275	0.02062	-0.05376***	0.02066	0.02086*	0.01577	-0.00984	0.04968	0.03284
GDP	-0.02008	-0.04953	0.05825***	-0.01752***	0.10358***	-0.00124	0.0058	-0.03097***	0.00318	-0.06473**	-0.06185*	0.01394
Housing starts	-0.00072	0.0378	0.005	-0.00374	-0.00688	-0.02454	-0.00968	-0.00918	0.03057	-0.00948	0.06142**	-0.00844
Industrial production	-0.03464	0.00114	-0.0128	-0.01032**	-0.03812*	-0.00325	-0.01843	-0.00983	0.04435	0.04172**	-0.03347	-0.00747
New home sales	0.00487	0.00237	0.07711***	-0.05791***	0.10903***	0.11668***	-0.00918	-0.00837	0.02354	0.00263	-0.00242	-0.05764**
Non-farm employment	0.08122	0.01522	0.18711***	-0.0161***	0.31928***	0.02718*	0.12234***	0.00857	0.05419	-0.0082	0.01478	0.03549
Pending home sales	0.01072	-0.01184	0.03844***	-0.01432**	0.03845*	0.03944**	0.01314	-0.00949	0.07867*	0.03292	0.06944**	0.09557***
Personal consumption	-0.01919	-0.02455	0.02154**	-0.01287**	0.04426*	0.01001	-0.00224	-0.00698	0.07037	0.02141	0.08558**	0.06103***
Personal income	0.00244	-0.01211	0.02834***	-0.02153***	0.05301**	-0.0366**	-0.00017	0.00224	0.07217*	-0.03518	0.05645*	-0.01085
Producer price index	0.02955	0.0347	0.04263***	-0.01819***	0.09391***	0.02112	-0.00732	-0.00549	0.03624	0.02379	-0.04616	0.01102
Trade balance	0.06625	0.02541	0.02594***	0.0001	0.03557*	0.0001	0.02995**	0.0001	0.1004**	0.0001	0.01924	-0.00631
Announcements specific to commodity markets												
Crude Oil Weekly inventory	0.15709***	0.0001									0.55047***	0.0001
Natural Gas Weekly inventory												
Observations	167663	167663	167808	167513	167513	167800	167800	99525	167472			
R ²	0.024286	0.119026	0.078046	0.084932	0.051116	0.138467						

This table presents estimates of eq. 10 using financialization variable PCA_t . The equation is $\sigma_t^2 = \alpha_0 + \alpha_1 \sigma_{t-1}^2 + \alpha_2 \epsilon_t^2 + \sum_{m=1}^{22} \Phi_m D_{m,t} + \beta X_{i,t} + \sum_{k=1}^n \phi_k I_{k,t} + \sum_{h=1}^{23} \rho_h D_{h,t}$ where $I_{k,t} = D_{m,t} \cdot X_{i,t}$ and $D_{m,t}$ is a macro announcement dummy variable for release m . The Φ_m coefficients capture the instantaneous change in the conditional variance when an announcement has just occurred. The ϕ_m coefficients capture the conditional variance when an announcement has just occurred in conjunction with the level of financialization.

Table 68: Announcement (macro & commodity-specific) and financialization (NLS) effects on futures returns (Anderson) - COVID Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m
Macroeconomic News Announcements												
Initial jobless claims	-0.04545	0.25974	0.59471***	-1.13786***	0.40291**	-1.74865**	-0.01129	-0.11214	-0.0543	0.32515	-0.10369	-1.5856
ADP Employment	0.74248	-2.55482	-0.43567	0.89551	-0.91471***	3.99182***	0.02609***	0.2848	0.00856	-0.14788	-0.12687	-3.0553
CB Consumer	0.0612	-0.12316	-0.60986***	1.48108***	-0.03017	0.15701	-0.027	0.07342	-0.05654	0.27157	0.09735	0.2346
Advance retail sales	-0.09164	0.54269	-0.41406***	0.96348***	0.16685	-0.77778	0.01098*	-0.08613	-0.01876	0.14217	-0.02755	-0.24234
Building permit	0.22228	-0.75017	-0.04566	0.09176	-0.13278	0.48782	0.06147**	-0.2534	-0.02074	-0.02363	0.14634	-0.07092
Construction spending	0.53453	-2.24173	0.10957	-0.27396	0.02796	-0.29808	0.0117	-0.13113	0.0148	0.15739	-0.1236	-3.01803**
Consumer credit	-0.01815	0.0694	-0.04799	0.08914	0.04146	-0.16946	-0.00022	0.05294	-0.01747	0.0999	-0.0135	0.1338
Consumer price index	-0.33805	1.62924	-1.16708***	2.84207***	-0.16883	0.43588	-0.07797*	0.09795	-0.08929**	0.26119	-0.03206	-0.00054
Durable goods orders	0.51862	-2.58132	-0.3922	0.88014	-0.35504	1.87*	-0.0255	0.10823	-0.03578	0.15641	0.01999	-0.57305
Existing home sales	0.58991	-2.54705	0.03807	-0.00523	-0.40235**	2.03458***	0.07517	-0.47665*	-0.00147	0.03681	0.14765*	-0.25902
Factory orders	-0.19669	1.10939	0.21624	-0.553	-0.04592	0.18448	0.04027	0.10386	0.01096	-0.32272	0.32097***	1.5154
GDP	-0.23449	0.97721	-0.70572***	1.64013***	-0.4354***	1.81678***	-0.05662***	0.08268	-0.05179*	0.00955	-0.04894	-0.53845
Housing starts	0.69354*	-3.10687*	-0.09214	0.21954	-0.05942	0.18765	-0.0462	0.28455	0.03841	-0.50371*	0.19792***	2.49147***
Industrial production	-0.30189	1.1093	-0.16446**	0.48594***	-0.05084	-0.05606	-0.04209**	0.11225	-0.02187	0.09941	-0.01813	-0.19064
New home sales	-0.33412	1.38105	0.1549	-0.4861	0.06567	-0.49807	-0.00844	0.00873	0.01582	-0.0777	0.00908	1.73377**
Non-farm employment	-0.80303	3.16933	-2.25307***	4.7518***	-0.30544	1.15128	0.02598***	0.71535**	-0.2476	-0.23485*	-0.23485*	-6.70136*
Pending home sales	-0.02867	0.30656	-0.03819	0.05664	-0.07454	0.23893	0.00434	-0.01312	-0.0543	0.20286	0.08725	-1.13834
Personal consumption	0.02105	-0.16725	-0.17619*	0.35382*	-0.08265	0.46931	0.01244	0.11582	-0.04277	0.27224	0.1004*	2.94972**
Personal income	-0.42911	1.57237	0.44312	-0.97133	-0.07904	0.31884	-0.02324	-0.36637	0.02008	-0.33371	-0.08319	-2.1378
Producer price index	-0.00818	0.05085	-0.36787	0.85008*	-0.09631	0.70632	0.05214	-0.26407*	0.01891	0.28042	-0.07461	0.03522
Trade balance	-0.47922	1.03039	-0.71022	1.46747	-0.57407	1.55683	-0.01685	-0.68907	-0.23565	1.73671***	0.12049	6.55701
Announcements specific to commodity markets												
Crude Oil Weekly inventory	0.43404***	-2.92289***									-0.15248***	0.69323
Natural Gas Weekly inventory												
Observations	167663	167608	167513	167800	167800	167800	167800	167800	99525	167472		
R^2	0.064778	0.023934	0.375798	0.001832	0.001832	0.001832	0.001832	0.001832	0.000645	0.002253		

This table presents estimates of eq. 6, $R_t^{t+\tau} = \alpha + \sum_{m=1}^{22} \gamma_m S_{m,t} + \delta X_{t,i} + \sum_{m=1}^{22} \theta_m (S_{m,t} \cdot X_t) + \beta R_{t-\tau}^t + \epsilon_t$ using the method proposed by [Kurov et al. \(2019\)](#) and financialization variable NLS_t . The γ_m coefficients capture the instantaneous change in return when an announcement has just occurred and especially if that announcement was unanticipated. The coefficients θ_m capture the instantaneous change in return when an announcement has just occurred in conjunction with the level of financialization.

Table 69: Announcement (macro & commodity-specific) and financialization (MSCT) effects on futures returns (Anderson) - COVID Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m
Macroeconomic News Announcements												
Initial jobless claims	0.61262	-3.40853	0.67563***	-2.12431***	-0.37409**	1.63791**	0.00154	-0.00423	0.11728	-0.54915	0.06307	-0.21294
ADP Employment	0.54653	-2.3227	0.76001	-2.29023	1.00713***	-3.80757***	-0.56481	1.90012	0.03954	-0.11099	-0.83315	3.67324
CB Consumer	-0.37383	2.29163	-0.69432***	1.95173***	0.22215	-0.6528	0.0618	-0.20672	-0.07147	0.17955	-0.3017	1.54191
Advance retail sales	-0.1315	0.8803	-0.29678**	0.80569*	-0.36205**	1.24506**	0.02314	-0.05732	0.1324	-0.38553	0.18357	-0.82216
Building permit	0.29916	-1.35271	0.53833	-0.31371	0.84876	0.18245	-0.4469	-0.55921*	1.37379	0.09321	0.14556	
Construction spending	0.93218	-4.81659	-0.00029	-0.11487	0.29838	-0.13334	0.40785	0.12326	-0.24384	0.19167	-0.7004	
Consumer credit	-0.03114	0.16117	0.08807	-0.27117	0.13318	-0.42683	0.14605	0.02779	0.02982	-0.0822	0.2697	
Consumer price index	-0.30311	1.81462	-1.76199***	5.02983***	1.66057***	-5.28235***	-0.3198	0.7058	-0.03335	-0.04811	-0.97262	3.55408
Durable goods orders	0.24468	-1.78173	0.13265	-0.42519	0.28031	-0.89251	0.10337	-0.33915	-0.1476	0.31323	0.46809	-1.75782
Existing home sales	0.59389	-3.14175	0.54884	-1.39753	-0.04211	0.20978	-0.16894	0.49071	0.49682	-1.36044	-0.59177	2.98539
Factory orders	-0.04914	0.45755	-0.53547	1.46705	-0.34892	1.13192	-0.46535	-0.0728	0.18977	0.182	0.17343	
GDP	-0.30652	1.55725	-0.2694	0.71389	-0.7602***	2.23691***	-0.15844	0.29443	-0.36005	0.82615	-0.41583	1.45666
Housing starts	-0.71177	3.93007	0.22953	0.66919	0.35287	-1.19372	-0.48113*	1.33879*	0.6642	-1.71391	0.50511	-1.71027
Industrial production	-0.10739	0.26241	-0.22763	0.53554	-0.29708**	0.71569*	-0.04614	0.06338	-0.23393	0.59352	-0.35588	1.44643
New home sales	-0.31879	1.65624	-0.2007	0.44138	-1.09761***	3.1945***	-0.06931	0.16065	0.07531	-0.15353	0.17619	-0.95015
Non-farm employment	-0.84183	4.22456	-2.87256***	8.56612***	0.30229	-1.30112	0.5447	-1.68055	1.63919***	-4.55108***	-0.76422	3.42419
Pending home sales	0.00968	0.16148	0.00281	-0.04324	0.26358	-0.94548*	0.02492	-0.05782	0.06567	-0.30928	-0.22636	0.79407
Personal consumption	0.09034	-0.57811	0.17361	-0.53926	0.02915	-0.06975	0.43553**	-1.30517*	-0.05787	0.12227	0.42694	-2.07925
Personal income	-0.42621	1.96958	0.2954	-0.90991	0.22657	-0.84713	-0.10612	0.32394	-0.39404	1.15361	-0.24276	1.17557
Producer price index	-0.02933	0.17061	-0.82032***	2.31846***	0.61724**	-1.90883*	0.10684	-0.25764	-0.09094	0.37102	-0.02082	-0.22931
Trade balance	-0.51296	1.40708	-0.25837	0.43088	-3.55831*	9.68199*	-1.43652	3.79459	0.36243	-2.26542	7.03853*	-28.68242*
Announcements specific to commodity markets												
Crude Oil Weekly inventory	-0.0397	-0.74685									1.33008***	-6.25265***
Natural Gas Weekly inventory												
Observations	167663		167808		167513		167800		99525		167472	
R ²	0.047446		0.004514		0.007262		0.009411		0.000451		0.006633	

This table presents estimates of eq. 6, $R_t^{t+\tau} = \alpha + \sum_{m=1}^{22} \gamma_m S_{m,t} + \delta X_{t,i} + \sum_{m=1}^{22} \theta_m (S_{m,t} \cdot X_t) + \beta R_{t-\tau}^t + \epsilon_t$ using the method proposed by [Kurov et al. \(2019\)](#) and financialization variable $MSCT_t$. The γ_m coefficients capture the instantaneous change in return when an announcement has just occurred and especially if that announcement was unanticipated. The coefficients θ_m capture the instantaneous change in return when an announcement has just occurred in conjunction with the level of financialization.

Table 70: Announcement (macro & commodity-specific) and financialization (WT) effects on futures returns (Anderson) - COVID Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m
Macroeconomic News Announcements												
Initial jobless claims	-9.37812**	8.69483**	1.04226***	-0.99028***	-1.70611***	1.5444***	-0.12278	0.09548	0.71968*	-0.62053*	0.8415	-0.68978
ADP Employment	-6.72813	6.29113	0.91226	-0.84107	2.93187***	-2.58682***	0.22061	-0.14126	0.16073	-0.11654	-3.1356	2.51403
CB Consumer	-3.14892	2.95504	-1.1072***	0.95782***	0.43062	-0.34582	0.97014	-0.74477	-0.12258	0.0919	-0.16648	0.20323
Advance retail sales	-1.1746	1.128	-0.70612***	0.61052***	-1.17782**	1.00044**	0.03623	-0.0232	0.15361	-0.11751	1.06807	-0.85827
Building permit	3.16361	-2.87966	-0.23539	0.19493	-0.118	0.06993	0.07525	-0.03827	-1.37879*	1.01927*	0.61484	-0.38285
Construction spending	12.81962*	-11.87974*	-0.15579	0.12145	-0.61612	0.50774	-0.52413	0.3965	0.2669	-0.17753	1.62071	-1.28567
Consumer credit	-0.55518	0.51354	0.16646	-0.15151	0.16208	-0.13467	0.1861	-0.13593	-0.53977	0.40832	0.41541	-0.34515
Consumer price index	-2.42372	2.26666	-3.23264***	2.76359***	4.35835***	-3.63087***	-3.71727***	2.74735***	-0.56479	0.3908	-5.2701	4.0442
Durable goods orders	-6.03844	5.49083	0.44587	-0.40246	1.766*	-1.4383*	1.01426	-0.80123	-0.37263	0.25714	1.16403	-0.89016
Existing home sales	8.09078	-7.47761	0.32227	-0.23914	3.29815***	-2.70191***	-2.76134**	2.1151**	1.77953	-1.36652	-0.91096	0.84182
Factory orders	-0.77761	0.75162	-0.84568	0.71956	-0.31041	0.25501	-0.01184	0.04729	-0.07751	0.05595	-5.02261**	4.13976**
GDP	-2.56631	2.34772	-1.40734***	1.24958***	-1.3317**	1.04571**	-0.12091	0.0454	-0.19022	0.11028	-1.21652	0.91775
Housing starts	-5.05047	4.69245	-0.11918	0.10259	0.66973	-0.56735	-0.16426	0.11514	1.75216*	-1.30399*	-2.58231	2.09926
Industrial production	1.98654	-1.90487	-0.492*	0.39238	-0.67884*	0.50209	0.17795	-0.15427	-0.73024	0.54318	0.53272	-0.43189
New home sales	-3.10045	2.86195	-0.73935**	0.60788*	-1.6891***	1.33493***	-0.04056	0.02384	0.06858	-0.04135	0.15572	-0.17009
Non-farm employment	2.76492	-2.52251	-4.60186***	4.18643***	1.31121	-1.18988	1.20205*	-0.85105*	2.42886**	-1.75302**	-1.77574	1.42714
Pending home sales	0.3099	-0.25331	0.01505	-0.02413	1.03042**	-0.88036**	0.18014	-0.13351	0.2593	-0.2316	-0.33369	0.24366
Personal consumption	2.64439	-2.48201	0.30235	-0.28214	0.27479	-0.23168	0.83967*	-0.61976*	-0.31155	0.23567	0.90084	-0.76592
Personal income	3.11583	-2.91682	0.26462	-0.24317	0.89955	-0.79416	-2.19115**	1.60021**	-2.3611	1.80037	-0.94352	0.78357
Producer price index	0.3592	-0.32889	-1.22444***	1.07298***	2.07951***	-1.70871**	-0.64016	0.48862	0.59953	-0.42681	-0.33252	0.20362
Trade balance	-3.0147	2.54248	0.94917	-0.89847	-3.55282	2.64003	-2.97902	2.21761	-5.09034*	3.59558	2.14896	-1.90228
Announcements specific to commodity markets												
Crude Oil Weekly inventory	-1.27609*	0.97388									8.3843***	-6.77751***
Natural Gas Weekly inventory												
Observations	167663	167808	167808	167808	167513	167800	167800	99525	99525	167472		
R ²	0.008558	0.004415	0.004415	0.008264	0.008264	0.002354	0.002354	0.00051	0.00051	0.002096		

This table presents estimates of eq. 6, $R_t^{t+\tau} = \alpha + \sum_{m=1}^{22} \gamma_m S_{m,t} + \delta X_{t,i} + \sum_{m=1}^{22} \theta_m (S_{m,t} \cdot X_t) + \beta R_{t-\tau}^t + \epsilon_t$ using the method proposed by [Kurov et al. \(2019\)](#) and financialization variable WT_t . The γ_m coefficients capture the instantaneous change in return when an announcement has just occurred and especially if that announcement was unanticipated. The coefficients θ_m capture the instantaneous change in return when an announcement has just occurred in conjunction with the level of financialization.

Table 71: Announcement (macro & commodity-specific) and financialization (PCA) effects on futures returns (Anderson) - COVID Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m
Macroeconomic News Announcements												
Initial jobless claims	0.01637	-0.05326	0.11071***	-3.44265***	0.17116***	-2.64002***	-0.02022	-0.41895*	-0.10401*	0.67413**	-0.00842	-0.01
ADP Employment	0.14026	-0.03517	-0.06477**	0.03394***	-0.20624***	0.07339***	0.06558	-0.01159	0.00202	-0.02773	0.10401	0.07242
CB Consumer	0.02371	0.03256	-0.00281	-0.03053	0.01125	-0.12967***	-0.01914	0.02026	-0.00144	-0.01489	0.0922	0.02155
Advance retail sales	0.02353	0.01231	0.00291	-0.03216***	0.03893	-0.01756	0.00115	0.00749	-0.00782	0.00648	-0.02489	-0.01499
Building permit	0.0649	-0.01946	-0.00885	0.02108***	-0.03225	0.04898**	0.03055	-0.00429	-0.03113	-0.01425	0.13387**	-0.00767
Construction spending	0.09814	-0.07454*	-0.01378	0.00526	-0.00164	0.00267	-0.00315	-0.02058	0.0294	0.06109*	0.00948	-0.01578
Consumer credit	-0.00302	0.00241	-0.00955*	0.0046	-0.00138	0.02377	0.00621	-0.01202	-0.00233	-0.01089	-0.01898	-0.0019
Consumer price index	0.0125	0.02644	0.03152	-0.00503	-0.05685	-0.00631	-0.07572*	0.00573	-0.05292	0.01597	-0.11318	0.10707
Durable goods orders	-0.07156	-0.02019	-0.02134	0.09967***	0.01635	-0.17011***	-0.00768	-0.01492	-0.03096	0.01855	0.02173	-0.02555
Existing home sales	0.0499	-0.04825	-0.04345**	-0.01471	0.01082	-0.07083*	0.00339	0.00612	-0.04089	0.01455	0.16902***	0.04344
Factory orders	0.03462	0.01333	-0.01043	-0.00932	-0.00069	-0.12964***	0.04887	-0.02691	-0.00127	-0.07927	0.23724***	0.0329
GDP	-0.0375	0.02194	-0.0445***	0.02361	-0.06267**	0.01123	-0.04745***	0.00157	-0.04077	0.00587	-0.04315	0.03003
Housing starts	-0.03014	0.05925	-0.00023	0.04681***	-0.02028	0.06014***	-0.01285	0.00845	0.01796	0.01417	0.06938	-0.02801
Industrial production	-0.06189	0.00365	-0.0367***	0.00288	-0.07065***	-0.026	-0.02676***	0.03603*	-0.00859	-0.07478*	-0.00213	0.00909
New home sales	-0.03183	0.02536	-0.0344**	0.01431*	-0.06748***	-0.02284	-0.00758	0.021**	0.01503	0.00018	-0.06398	-0.02599
Non-farm employment	-0.12691	0.07469	-0.24274***	0.02046*	-0.12293***	0.06364***	0.10412*	0.0024	0.0291***	-0.00322	0.08943	0.05628
Pending home sales	0.03749	0.00191	-0.01326	0.13656***	-0.03696	-0.05263	0.00376	0.04051	-0.05177	-0.13362***	-0.0245	0.01583
Personal consumption	-0.00871	-0.01052	-0.02509	-0.0011	-0.00983	-0.03916*	0.00905	0.00087	-0.00512	-0.01319	-0.09571*	-0.03037
Personal income	-0.07904	0.02824	-0.01185	-0.00926	-0.059	-0.0134	-0.05603	0.00237	0.05514	0.00791	0.0631	0.02441
Producer price index	0.00189	0.00157	-0.02263	-0.00557	0.00758	-0.03547	0.02167	-0.02551	0.0428	0.07335	-0.07715	-0.00044
Trade balance	-0.27103	0.02015	-0.09407	-0.03576***	-0.34442*	-0.07393**	-0.09269	-0.02169	-0.45374	-0.00373	-0.28918	-0.36366
Announcements specific to commodity markets												
Crude Oil Weekly inventory	-0.1799***	-0.00544									-0.0427**	0.02202
Natural Gas Weekly inventory												
Observations	167663	167808	167808	167513	167800	167800	167800	99525	167472			
R ²	0.022393	0.004461	0.008294	0.003113	0.000467							

This table presents estimates of eq. 6, $R_t^{t+\tau} = \alpha + \sum_{m=1}^{22} \gamma_m S_{m,t} + \delta X_{t,j} + \sum_{m=1}^{22} \theta_m (S_{m,t} \cdot X_t) + \beta R_{t-\tau}^t + \epsilon_t$ using the method proposed by [Kurov et al. \(2019\)](#) and financialization variable $X_{t,2} = PCA_t$. The γ_m coefficients capture the instantaneous change in return when an announcement has just occurred and especially if that announcement was unanticipated. The coefficients θ_m capture the instantaneous change in return when an announcement has just occurred in conjunction with the level of financialization.

Table 72: Announcement (macro & commodity-specific) and financialization (MM-NLS) effects on futures returns (Anderson) - COVID Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m
Macroeconomic News Announcements												
Initial jobless claims	0.14345	-1.42742	0.17075***	-0.55314***	-0.1142	1.12704*	-0.01009	-0.10161	-0.05732	0.24734	-0.01907	-0.89613
ADP Employment	0.98105	-4.97175	-0.17165	0.70032	0.16866	-1.34665	0.02155***	0.21855	0.00978	-0.1128	-0.02806*	-0.33818
CB Consumer	0.06229	-0.19395	-0.1244***	0.72538***	-0.08727	0.52711	-0.02942	0.07681	-0.06611	0.2215	0.03322	1.49148
Advance retail sales	-0.02006	0.3694	0.06401	-0.42309**	-0.01343	0.10848	0.01079*	-0.0738	-0.01869	0.1082	-0.02988	-0.36693
Building permit	0.06934	-0.02889	0.04838	-0.34055	-0.13519	0.60673	0.06081**	-0.20345	-0.0184	-0.03295	0.17712***	-0.76729
Construction spending	0.3647	-2.45834	0.02305	-0.19001	-0.00804	-0.18297	0.01324	-0.10426	0.01246	0.11532	0.02507	-1.24058
Consumer credit	0.01737	-0.15891	-0.03038	0.1176	0.02829	-0.15551	-0.00215	0.058	-0.03439	0.14655	-0.02813***	0.51593*
Consumer price index	-0.06864	0.48641	-0.48191***	2.5509***	-0.24681**	0.96106	-0.07315	0.02951	-0.11383*	0.25626	-0.03935	-0.21668
Durable goods orders	-0.03118	-0.41957	-0.02684	0.06687	-0.10341	0.62018	-0.02061	0.06206	-0.09815	0.40206	0.06363	-0.60556
Existing home sales	1.44904***	-10.0682***	-0.07456	0.69619	-0.26804**	1.80693***	0.07323	-0.36525	-0.0093	0.06852	0.15145**	0.18712
Factory orders	-0.15613	1.42883	0.02577	-0.25018	0.01455	-0.10884	0.04592	0.03187	0.0704	-0.5739	0.21214***	2.18183**
GDP	-0.20069	1.26043	-0.42282***	2.17956***	-0.30175***	1.40962***	-0.06302***	0.13543	-0.05317**	0.0071	0.02419	-0.93576
Housing starts	-0.36081	2.60286	-0.02728	0.15528	0.1059	-0.69868	-0.0518	0.25987*	0.05491	-0.4117	0.06076	1.39965**
Industrial production	0.55323**	-3.47897*	0.00517	-0.28685***	-0.13717	0.48129	-0.04181***	0.11501	-0.02402	0.07239	-0.01054	0.18701
New home sales	-0.38493	2.39172	-0.11531**	0.83346***	0.0376	-0.49608*	-0.00899	0.01344	0.02743	-0.09614	-0.09254*	1.22309
Non-farm employment	-0.81564	4.66913	-0.85995***	3.70331***	-0.28019*	1.44452	0.01314***	0.65088**	0.08614	-0.75356	0.00485	1.6299
Pending home sales	0.10685	-0.41308	-0.03913	0.11597	0.00207	-0.13632	0.00513	-0.01548	-0.0693	0.19273	-0.01372	-0.99959
Personal consumption	-0.32283	2.01176	-0.09404*	0.35668*	-0.0064	0.15262	0.00955	0.08914	-0.05897	0.28894	-0.03718	0.3046
Personal income	-0.6272	3.40529	-0.06305	0.28312	0.12181	-0.76116	-0.01311	-0.33306	-0.03484	0.14204	0.00804	-1.45128
Producer price index	0.09055	-0.59029	-0.22914***	1.11871***	0.17643	-0.76738	0.0501	-0.21088	-0.00594	0.31662	-0.07708	0.15841
Trade balance	-0.84652	3.98595	-0.11236	0.06451	-0.50141	1.53847	0.00332	-0.6124	-0.47363**	2.34187***	-0.5706*	6.86534
Announcements specific to commodity markets												
Crude Oil Weekly inventory	0.61238***	-6.14434***									-0.22813***	1.06581*
Natural Gas Weekly inventory												
Observations	167663		167808		167513		167800		99525		167472	
R^2	0.053127		0.070328		0.08445		0.001853		0.00079		0.00198	

This table presents estimates of eq. 6, $R_t^{t+\tau} = \alpha + \sum_{m=1}^{22} \gamma_m S_{m,t} + \delta X_{t,i} + \sum_{m=1}^{22} \theta_m (S_{m,t} \cdot X_t) + \beta R_{t-\tau}^t + \epsilon_t$ using the method proposed by Kurov et al. (2019) and financialization variable $MM_N L S_t$. The γ_m coefficients capture the instantaneous change in return when an announcement has just occurred and especially if that announcement was unanticipated. The coefficients θ_m capture the instantaneous change in return when an announcement has just occurred in conjunction with the level of financialization.

Table 73: Announcement (macro & commodity-specific) and financialization (SWAP-NLS) effects on futures returns (Anderson) - COVID Sample

Commodities	Crude Oil		Gold		Copper		Silver		Palladium		Natural Gas	
Announcements	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m	γ_m	θ_m
Macroeconomic News Announcements												
Initial jobless claims	-0.89496*	-4.09288*	0.07472	0.18379	0.01393	-1.65582	-0.09155	0.47314	-0.16864	0.83167	-0.07927	1.78958
ADP Employment	-0.14843	-1.04245	-0.40782	-1.04722	-0.24557***	-4.96823**	0.32648***	-1.57458**	-0.04492	0.19552	-0.062*	1.505
CB Consumer	0.79654	3.70519	-0.41931***	-1.31374**	0.03907	1.05049	0.05263	-0.44789	0.07894	-0.65015	0.05856	0.45109
Advance retail sales	0.72251	3.40231	-0.31117**	-0.97206**	0.01237	0.49329	-0.03803	0.2522	0.03481	-0.19117	0.00161	-0.55419
Building permit	-0.52002	-2.71588	-0.16655	-0.47999	-0.05762	-0.76005	-0.05268	0.49564	-0.03147	0.04995	0.10697	0.38041
Construction spending	-1.19199	-5.78384*	-0.39048***	-1.17776***	-0.02138	0.40299	-0.17317*	0.99716**	0.02841	0.0367	-0.08385	2.43298**
Consumer credit	0.03251	0.17062	0.01	0.06238	0.0134	0.20846	0.02648	-0.12523	0.02197	-0.1961	-0.0202	0.01142
Consumer price index	0.06776	0.35182	-0.54339*	-1.53549*	-0.12314*	-0.92186	0.42702***	-2.89956***	0.02287	-0.52833	-0.02689	-0.03551
Durable goods orders	0.52914	2.87364	-0.38085	-1.11566	-0.02141	-1.65602	0.07771	-0.61119	0.25438	-1.62519	0.02707	-0.23218
Existing home sales	-1.04204	-5.004	-0.20072	-0.78963*	0.01027	-1.26128*	0.00366	-0.02803	0.05831	-0.37058	0.13693*	0.34103
Factory orders	0.67501	2.79318	0.31604	0.99072	0.00217	0.15056	0.062	-0.07955	-0.167	0.8627	0.28589***	-0.79172
GDP	0.43148	2.11369	0.3272	1.0379	0.11694	4.06632***	0.04724	-0.51218	-0.0352	-0.07047	-0.05496	0.39328
Housing starts	-0.04078	-0.15253	-0.31528	-0.95063	9e-05	0.41302	-0.0384	0.18767	-0.18638*	1.1602*	0.16503***	-1.70271***
Industrial production	0.79459	4.11378	0.10303	0.44519*	-0.08364***	-0.72115	-0.03912	0.10691	0.07631	-0.51944	0.01157	-0.3227
New home sales	-0.1849	-0.70232	0.03398	0.25944	-0.01174	0.79374*	0.02145	-0.16252	-0.01977	0.15975	0.0287	-1.28677**
Non-farm employment	-1.90581	-9.63375	-3.02494***	-8.11226***	-0.06516	-0.29077	0.47764**	-2.37319**	-0.50991	2.3199	-0.08382	2.99233
Pending home sales	0.03341	-0.01272	-0.03607	-0.06506	-0.00886	0.34191	0.00576	-0.01579	0.04711	-0.45034	-0.0664	0.6485
Personal consumption	0.47185	2.23624	-0.28154	-0.78895	0.00988	-0.18793	0.07349	-0.33389	0.2647	-1.28398	0.03005	-1.74638**
Personal income	0.72633	3.73763	-0.06427	-0.17556	-0.05639	-1.24656	-0.27107	1.35096	-0.00344	-0.05214	-0.01474	0.84967
Producer price index	-0.50352	-2.51949	-1.04415***	-2.9798***	0.0837	0.62859	-0.09207*	0.76796*	0.04654	0.00993	-0.04923	-0.3761
Trade balance	-1.36357	-4.95813	0.22685	0.96541	-0.29126	-1.32243	-0.44719	1.95525	0.54791	-3.60731***	-0.02911	-3.12693
Announcements specific to commodity markets												
Crude Oil Weekly inventory	-0.40698***	-1.04967*										
Natural Gas Weekly inventory											-0.19806***	0.26518
Observations	167663	167808	167513	167800	99525	167472						
R^2	0.014495	0.030615	0.002017	0.004754	0.001636	0.003925						

This table presents estimates of eq. 6, $R_t^{t+\tau} = \alpha + \sum_{m=1}^{22} \gamma_m S_{m,t} + \delta X_{t,i} + \sum_{m=1}^{22} \theta_m (S_{m,t} \cdot X_t) + \beta R_{t-\tau}^t + \epsilon_t$ using the method proposed by [Kurov et al. \(2019\)](#) and financialization variable $SWAP_N LS_t$. The γ_m coefficients capture the instantaneous change in return when an announcement has just occurred and especially if that announcement was unanticipated. The coefficients θ_m capture the instantaneous change in return when an announcement has just occurred in conjunction with the level of financialization.