Supplement to “Why Does Public News Augment Information Asymmetries?”

S.1 Data and intraday estimation

Table S.2 presents some summary statistics of the main variables used in the paper between 10:00 a.m. and 11:00 a.m. It shows that oil firms are similar to non-oil firms; however, they tend to have lower spreads and volume. Additionally, we observe that volume is highly volatile in non-oil firms as they are a more heterogeneous group. Regarding the composition, the oil sector contributes with 390,028 observations to the sample, which accounts for 9% of the sample (four firms). The identification of the estimates relies, loosely, on comparing different days inside a month and aggregate the effect across months and firms; therefore, a low number of firms is not a concern since the number of days is high enough. Nonetheless, Section S.13 confirms that results are maintained with a wider panel data set.

The empirical results of the paper rely on one-minute aggregated data. It is relevant, however, to explore the intra-minute movements. Figure S.3 shows the mean spread and volume on Wednesdays around 10:30 a.m., for oil firms. We observe that spreads double at the time of the release, and then decrease to a level around 30% higher than the initial one. Similarly, volume is 40% higher than the initial level some seconds from the announcement, after an initial increase of more than 100%. Not surprisingly, spreads react before 10:30 as market makers will provide the quotes before the report is published to avoid being hit by a high-frequency trader as soon the information is public.

The previous graph shows the market reaction unconditional to the report. Since the main empirical contribution of the paper is to study the liquidity dynamics depending on the content, I repeat the same exercise in Figure S.4 dividing the sample into days with an extreme inventories increase ($News > .43$), an extreme decrease ($News < -.43$), and a small change ($-.43 < News < .43$).[1] The three columns are identical suggesting that content does not matter.

This lack of dependence would also be present if the measure of news ($News$) is noisy and does not provide information. In this situation, price movements at 10:30 a.m. should

[1] $News$ has mean zero and standard deviation equal to one. I select the threshold such that each group has the same number of observations. The jump at 10:30 and the pattern are robust to different thresholds (.75, 1.65, 2). The dispersion of the points, however, changes across graphs as each mean is estimated with a different number of observations.

not be related to *News*. Figure S.5 shows that prices and the change in inventories are negatively correlated. The correlation equals -0.28, and it is significant at the 1% level.

S.2 Model extensions

In this section, I extend the model along several dimensions to assess the importance of the main assumptions. Although it is a standard assumption in the literature, the insensitivity of noise traders to prices might have an effect on the empirical predictions. The first extension illustrates that even if noise traders might decide not to trade at unfavorable prices, as long as their private value is high enough, the results of the model do not change. Another concern is the asymmetry between market makers and informed traders. While the former are risk-neutral by assumption, the latter are heterogeneous and risk-averse. The second extension shows that this assumption is actually the result of perfect competition between heterogeneous and risk-averse market makers. The third extension addresses the implications of the independence assumption between the public and the private signal by considering that the public signal may reveal the private information. If the probability of losing the private information is low the baseline results hold; in contrast, if this probability is very high volume and spreads might decrease at the time of release. Ultimately, it is an empirical question.

S.2.1 Sensitive Noise Traders

The baseline model highlights the behavior of informed agents who maximize utility and trade with a market maker that makes zero profits in expectation due to perfect competition. In this extension, I model explicitly the third type of agents, the noise traders.

Noise traders represent investors that obtain a private value for the asset besides the common value. Passive funds that need to rebalance their portfolio, asset managers with hedging necessities, or investors looking for liquidity are examples of noise traders. When taking the decision between trading or not, these investors compare the private benefit they obtain with the price of the asset. Hence, I characterize noise traders utility as $U(d_i) = (\mathbb{E}(v) - p(d_i) + \theta\tau_i)\, d_i$ where τ_i is the private value for investor i. To simplify the exposition, I assume τ has a symmetric distribution around 0. Precisely, with probability

$\frac{1}{2}$ the private value is positive with c.d.f and p.d.f given by $\Phi(\tau)$ and $\phi(\tau)$; otherwise τ is negative with c.d.f equal to $1 - \Phi(-\tau)$ and p.d.f $\phi(-\tau)$. Note that I implicitly assumed $\Phi(x) = 0$ if $x < 0$; moreover similar to the baseline case I assume that, at least, some noise traders are present in the market regardless of the quotes: $\Phi(0) > 0$.

Given equilibrium prices A_t^* and B_t^*, the best response of a noise trader is characterized by:[2]

$$\begin{aligned}
d_i &= 1 \text{ (Buy) if } \tau > \frac{A_t^* - \mathbb{E}(v|\mathcal{H}_t)}{\theta}, \\
d_i &= -1 \text{ (Sell) if } -\tau > \frac{\mathbb{E}(v|\mathcal{H}_t) - B_t^*}{\theta}, \\
\text{and } d_i &= 0 \text{ (Leave) otherwise}
\end{aligned}$$

A noise investor buys if the liquidity cost $A_t^* - \mathbb{E}(v|\mathcal{H}_t)$ is smaller than her private benefit $\theta\tau$. As a result, the probability that a noise trader buys is $\frac{1}{2}\left(1 - \Phi\left(\frac{A_t^* - \mathbb{E}(v|\mathcal{H}_t)}{\theta}\right)\right)$, and the probability that she sells is $\frac{1}{2}\left(1 - \Phi\left(\frac{\mathbb{E}(v|\mathcal{H}_t) - B_t^*}{\theta}\right)\right)$. The specific case of $\theta \to \infty$ corresponds to the baseline model.

The best response of the informed traders is exactly the same as in the baseline model. The pricing rule of the market maker, however, has to take into account the price sensitivity of noise traders. In the baseline case, if the market maker widens the spread, she increases her profits because she earns more from the noise traders and, at the same time, some informed traders leave the market. In contrast, if noise traders are sensitive to prices they might leave the market as well, which erodes the market maker's profit. To maintain the existence of an equilibrium, this latter channel cannot play a major role; that is, the price sensitivity of noise traders cannot be much higher than the one of informed agents. Proposition 1 formalizes the condition that guarantees the existence of equilibrium.

Proposition 1. *An equilibrium exists and it is unique at every t if*

$$\frac{f(x)}{F(x)(\sigma_\mu + \sigma_\epsilon)} - \frac{\phi(y)}{(1 - \Phi(y))\,\theta} > 0$$

for all $x \in \left(0, \frac{2\sigma_\omega}{\sigma_\epsilon + \sigma_\mu}\right)$ and $y \in \left(0, \frac{2\sigma_\omega}{\theta}\right)$ where $f(x)$ is the p.d.f of γ.

[2] For simplicity, I do not consider $A_t^* < B_t^*$ as it does not hold in equilibrium.

The condition in Proposition 1 is convoluted since it links the risk-aversion distribution with the distribution of private values. In the simplifying case that $\gamma \sim Exp(\lambda_\gamma)$ and $\tau \sim Exp(\lambda_\tau)$, a sufficient condition is:

$$2\sigma_\omega \lambda_\gamma < \frac{\theta}{\lambda_\tau}.$$

The left hand size equals the maximum information rents $(2\sigma_\omega)$ over the mean risk aversion $\left(\frac{1}{\lambda_\gamma}\right)$, which constitutes a measure of the loss by the market maker due to adverse selection. There is a unique equilibrium if this loss is lower than the amount she can extract from liquidity traders, which depends on their mean private valuation $\left(\frac{\theta}{\lambda_\tau}\right)$.

If the condition in Proposition 1 is not satisfied we have two cases. Either the bid-ask spread decreases the market maker profits, or it increases or decreases the profits depending on the quote level. In the former case, we do not have an equilibrium as the market maker never makes zero profits in expectation because there are not enough noise traders. The latter case can lead to non-existence or multiple equilibria depending on the parameters. Consider $A^\dagger - B^\dagger$ is a spread that makes the market maker break even. As the bid-ask spread increases, noise traders leave the market which reduces profits but also informed traders leave the market. If the condition in Proposition 1 is not satisfied there can be another pair of quotes $A^\ddagger$ and $B^\ddagger$ with the same proportion of informed to uninformed, hence the same profits but a lower volume.

The main model predictions hold in the new set-up. Regarding the midpoint, the market maker incorporates immediately the public information, hence she changes the midpoint by μ at the time of the release. Meanwhile, the bid-ask spread increases because more informed agents enter the market. In terms of volume, however, the prediction depends on the model parameters. Whereas a lower uncertainty encourages informed investors to trade, the widening of the bid-ask spread discourages some noise traders to stay in the market which affects the total volume. The net effect of these two forces depends on the sensitivity of noise traders but unfortunately, the explicit condition cannot be obtained in closed form.

To illustrate the result I solve the model under a precise parameter configuration. Precisely, I assume that the risk aversion parameter (γ) and the private value (τ) have an exponential distribution with expectation equal to 5. I fix the variance of the private information, the public information, and the residual noise $(\sigma_\omega^2, \sigma_\mu, \sigma_\varepsilon)$ to $0.5, 1$ and 0.25 respectively, and the release time (t_R) to 31. The realization of the public signal is set to 1. Figure S.1 presents the results for different degrees of sensitivity. The blue solid line corresponds to the baseline case $(\theta \to \infty)$ whereas the red dashed line and the black circles are the solution to the extended model with $\theta = 0.5$ and $\theta = 0.25$, respectively. In terms of magnitude, the former implies that the private value is on average twice the standard deviation of the value of the asset, while the second parameter reduces it to one standard deviation.

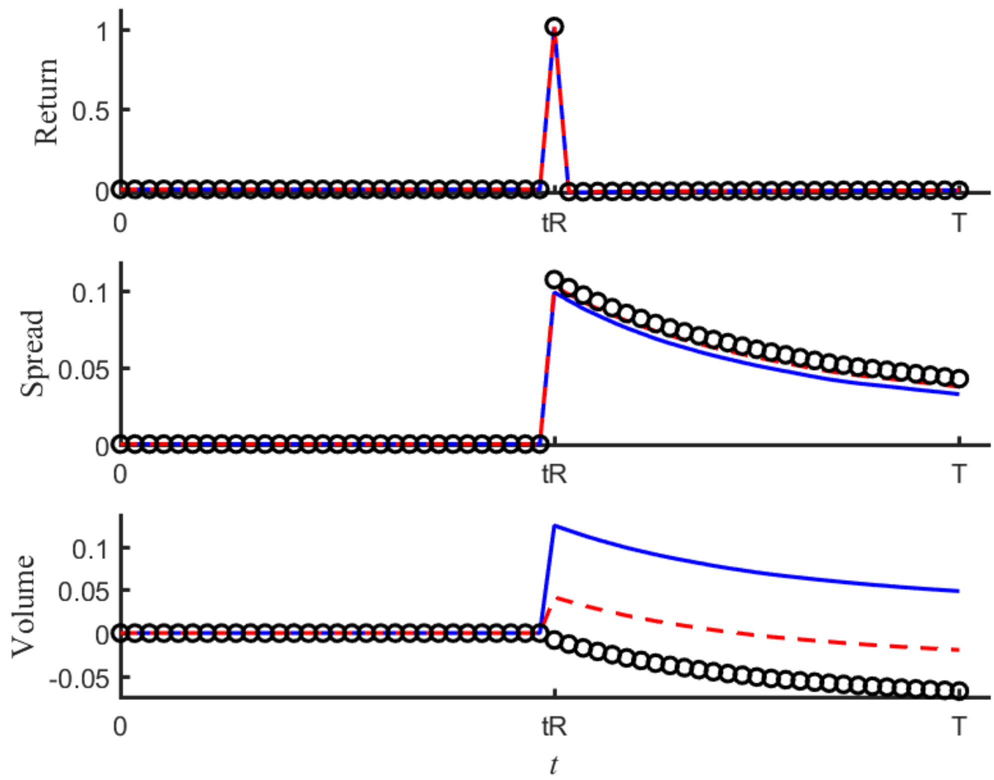


Figure S.1: Sensitive Noise Traders. The average path of return, spread and volume over 10,000 simulations. Each path consists of 60 trading rounds, and the public news is released at tR=31 and equals 1 ($\mu = 1$). The risk-aversion and private values are assumed to be distributed according to an $Exp\,(5)$. I fix the variance of the private information, the public information, and the residual noise $(\sigma_\omega^2, \sigma_\mu, \sigma_\varepsilon)$ to $0.25, 1$ and 0.25 respectively. Following Cipriani and Guarino (2014), I set $\delta = 40\%$. The blue line considers $\theta \to \infty$ whereas the red dashed line and the black circles assume $\theta = 0.5$ and $\theta = 0.25$ respectively.

Figure S.1 shows that the price sensitivity of noise traders does not affect the midpoint returns but it modifies the effect that public news has on the bid-ask spread and volume. The spread increases at the time of the release; furthermore, this effect is amplified when private values are low because the market maker needs to charge more to the noise traders that remain in the market in order to compensate for those who leave. In contrast, the level of price sensitivity of noise traders lessens the surge of trading and volume might even decrease after the signal realization.

S.2.2 Risk-averse market makers

The market maker in the baseline model makes zero profits in expectation. In this section I extend the baseline model by considering that there is a pool of market makers with the following utility function:

$$U_t^{MM}(A,B) = \mathbb{E}\left[\mathbb{1}\{d_t = 1\}\,(v - B) + \mathbb{1}\{d_t = -1\}\,(A - v) - \alpha_i\, Var_t\,(v|\mathcal{H}_t, d_t)\,\mathbb{1}\{d \neq 0\}|\mathcal{H}_t\right]$$

where $\mathbb{1}\{\cdot\}$ is a dummy variable that takes value 1 if the expression within the brackets is true and 0 otherwise. The utility is a mean-variance utility function which is consistent with the objective function of the informed agents. Similar to informed agents, market makers are heterogeneous in their risk aversion whose distribution is characterized by the parameter α with c.d.f $G(\cdot)$. Analogous to $F(\cdot)$, I consider $G(c) > 0$ for all $c > 0$.

Lemma 1 establishes that only the market makers with the lowest risk aversion participate and characterizes the pricing decision of these agents.

Lemma 1. *If market makers compete à la Bertrand, transactions will take place at the following prices:*

$$A_t^* = \mathbb{E}\,(v|\mathcal{H}_t, d = 1)\,, \quad B_t^* = \mathbb{E}\,(v|\mathcal{H}_t, d = -1)$$

and only market makers with $\alpha_i = 0$ participate in the market.

Risk-averse market makers are not competitive as they require higher prices to be compensated for the risk. As a result, the relevant market maker is characterized by risk-neutrality, and this extension is equivalent to the baseline model.

S.2.3 Correlated Signals

In the baseline model, public information is assumed to be independent of the private information. Sometimes this might not be the case, and the public signal discloses the private information held by some traders. In this extension, I consider the same baseline model but at the time of the release, besides μ, the market maker observes ω with probability ρ. As a consequence, ρ denotes the probability that the informed traders lose their complete informational advantage.

This modification of the information structure does not change the optimal decision of the informed agents before the release of the public information as they are not forward-looking. Intuitively, if an informed agent has an opportunity to obtain positive utility, she would do so regardless if her information will be revealed afterward because ρ changes the uncertainty of the announcement for the market maker but it does not affect the risk faced by the informed agents. After the public signal realizes, the behavior of traders depends on the disclosure of information. With probability ρ, informed agents lose their advantage and leave the market. As a consequence, volume decreases to $1-\delta$ and the spread decreases to 0. Meanwhile, with probability $1-\rho$ the informational advantage remains exactly the same as in the baseline case.[3]

I focus on the results at t_R. To ease the exposition, I define $\Delta Volume^B$, $\Delta BidAsk^B$ and $\Delta midpoint^B$ as the difference at $t = t_R$ between the baseline model with and without public news. Following the arguments above, Proposition 2 characterizes the same differences under this new set-up.

Proposition 2. *When we consider the possibility that private information might be disclosed by the public signal, the effects of the presence of public news at the time of the release on the midpoint coincides with those of the baseline model*

$$\Delta Midpoint^{CS} = \Delta Midpoint^B = \mu.$$

However, the effect on bid-ask spreads is smaller than in the baseline case, and it might

[3] The assumption of perfect competition among market makers forces them to reveal (through quotes) that they know ω. Hence, assuming that informed agents realize that they have lost their advantage or not leads to the same results.

even have the opposite sign,

$$\Delta BidAsk^{CS} = (1-\rho)\Delta BidAsk^{B} - \rho\left(A^*_{0,t_R} - B^*_{0,t_R}\right).$$

Volume follows a similar pattern than spreads,

$$\Delta Volume^{CS} = (1-\rho)\Delta Volume^{B} - \rho\frac{\delta}{2}\left(F\left(\frac{\sigma_\omega - A^*_{0,t_R}}{\sigma_\epsilon + \sigma_\mu}\right) + F\left(\frac{B^*_{0,t_R} + \sigma_\omega}{\sigma_\epsilon + \sigma_\mu}\right)\right).$$

The predictions about the expected midpoint are exactly the same as in the baseline case. The effect on spreads and volume is the net effect of two forces. On the one hand, the public signal reduces uncertainty which boosts participation of informed traders. On the other hand, it might also eliminate their private information forcing them to leave the market. The overall effect depends on the relative strength of the latter channel which is measured by ρ. If ρ is high enough, volume and spreads decrease when a public signal is released; otherwise, the predictions of the baseline model remain valid. Therefore, the dominant channel can only be found empirically by observing if spreads increase or decrease after an announcement.

S.2.4 Proofs extensions

Proof. Proposition 1

Let define $h(A) = A + \sigma_\omega - 2\sigma_\omega P(\omega = \sigma_\omega|\mathcal{H}_t, d=1) + \tilde{\mu}$; therefore, A^* is the only ask quote such that $h(A^*) = 0$. Following the proof of Proposition 1 in the main paper, we need to prove that $h'(A) > 0$ for all A; or equivalently $\frac{dP(\omega=\sigma_\omega|\mathcal{H}_t, d=1)}{dA} > \frac{1}{2\sigma_\omega}$. With some algebra we get that $P(\omega = \sigma_\omega|\mathcal{H}_t, d=1) = 1 - \frac{1}{X + \frac{1}{(1-\Pi))}}$ where $\Pi = P(\omega = \sigma_\omega|\mathcal{H}_t)$ and

$$X = \frac{2\delta\Pi F\left(\frac{\sigma_\omega + \tilde{\mu} - A}{\sigma}\right)}{(1-\Pi)(1-\delta)\left(1 - \Phi\left(\frac{A - \mathbb{E}\left(v|\mathcal{H}_t\right)}{\theta}\right)\right)}$$

A sufficient condition for an equilibrium to exist and be unique is that $\frac{dX}{dA} > 0$ for all A. This derivative is given by:

$$\frac{dX}{dA} = \frac{-2\Pi\delta(1-\Pi)}{(1-\Pi)(1-\delta)\left(1 - \Phi\left(\frac{A - \mathbb{E}\left(v|\mathcal{H}_t\right)}{\theta}\right)\right)}\Delta$$

Since the first factor is positive, we can focus on Δ:

$$\Delta = \left(1 - \Phi\left(\frac{A - \mathbb{E}\left(v|\mathcal{H}_t\right)}{\theta}\right)\right) f\left(\frac{\sigma_\omega + \tilde{\mu} - A}{\sigma}\right)\frac{1}{\sigma} - \phi\left(\frac{A - \mathbb{E}\left(v|\mathcal{H}_t\right)}{\theta}\right)\frac{1}{\theta} F\left(\frac{\sigma_\omega + \tilde{\mu} - A}{\sigma}\right)$$

Δ needs to be positive for every A which leads to the condition in Proposition 1.

□

Proof. Lemma 1

I focus on the ask side. $A_t = \mathbb{E}\left(v|\mathcal{H}_t, d = 1\right) + \kappa$ can never be an equilibrium for $\kappa > 0$ since risk-neutral market makers would under-price.[4] Therefore, the only possible equilibrium is $A_t = \mathbb{E}\left(v|\mathcal{H}_t, d = 1\right)$ which is indeed an equilibrium as it maximizes the utility of the market maker. Actually, she is indifferent between leaving the market or providing liquidity.

The same rationale follows for the bid side. Note that, while in principle both sides must be considered together, the reaction functions are independent. For instance, $A_t > \mathbb{E}\left(v|\mathcal{H}_t, d = 1\right)$ and $B_t > \mathbb{E}\left(v|\mathcal{H}_t, d = -1\right)$ is not an equilibrium because traders will sell to this market maker but they will buy to any market maker that posts $A_t = \mathbb{E}\left(v|\mathcal{H}_t, d = 1\right)$. As a consequence, the utility of the first market maker will be negative.

□

Proof. Proposition 2

Results are a weighted average between the baseline model, and the difference between a model without private news and one with private news but without public news.

In the case of the midpoint the proof of Proposition 2 in the main paper applies. Bid-ask spreads, however, are different as the market maker learns the private information with probability ρ. In that case, after t_R:

$$A^*_{1,t} - B^*_{1,t} - (A^*_{0,t} - B^*_{0,t}) = -(A^*_{0,t} - B^*_{0,t})$$

hence

$$\Delta BidAsk^{CS} = (1 - \rho)\Delta BidAsk^{B} - \rho\left(A^*_{0,t_R} - B^*_{0,t_R}\right).$$

[4] $G(c) > 0\ \forall c > 0$ ensures these agents exist.

Similarly, if ω is revealed at t_R then:

$$\mathbb{E}\left(|d^*_{1,t}|\right) - \mathbb{E}\left(|d^*_{0,t}|\right) = (1-\delta) - \left((1-\delta) + \delta\frac{1}{2}\left(F\left(\frac{\sigma_\omega - A^*_{0,t_R}}{\sigma_\epsilon + \sigma_\mu}\right) + F\left(\frac{B^*_{0,t_R} + \sigma_\omega}{\sigma_\epsilon + \sigma_\mu}\right)\right)\right)$$

for all $t \geq t_R$ which leads to:

$$\Delta Volume^{CS} = (1-\rho)\Delta Volume^{B} - \rho\frac{\delta}{2}\left(F\left(\frac{\sigma_\omega - A^*_{0,t_R}}{\sigma_\epsilon + \sigma_\mu}\right) + F\left(\frac{B^*_{0,t_R} + \sigma_\omega}{\sigma_\epsilon + \sigma_\mu}\right)\right).$$

$\square$

S.3 Afternoon Sample

To test the limiting results, in Figure S.2, I plot the estimate for the last hour of the trading day. The graphs confirm the dissipation of the effects since estimates are not significant in all cases. Likewise, these results constitute a placebo test that reinforces the validity of previous results.

S.4 Different weekdays as controls

To estimate the dynamic effect of the Weekly Petroleum Status Report, I rely on the parallel trend assumption. In other words, I assume that any differences between oil and non-oil firms on Mondays, Tuesdays, Thursdays, and Fridays remain constant on Wednesdays, except for the data publication. However, there might be other factors that affect these days at 10:30. Actually, on Thursdays, the Energy Information Administration publishes a similar report on gas which is very likely to affect oil firms. Even if Figure 2 suggest that oil prices do not move abnormally the remaining weekdays, it is possible that my main conclusions result from changes in just one of the control days. To tackle this issue, in Figures S.6, S.7 and S.8, I present the estimates of γ_2 and γ_1 of Equation (3), but restricting the control group to one specific day. For instance, the first row compares Wednesdays with Mondays, whereas the second one compares them with Tuesdays. We observe that the effect is present in all specifications. Besides, the magnitudes are identical with the exception of Thursdays due to the report mentioned above.

S.5 Estimation firm by firm

Similar to a specific day driving the result, a particular oil firm might be the driver of my findings. To address this concern, I estimate Equation (3) using just one oil firm as treated and dropping the other three firms. Figures S.9, S.10, and S.11 confirm that every firm presents the same pattern across the different dependent variables. Nonetheless, the magnitude of the effects differs, which is consistent with the model, since the importance of the report depends on the firm's corporate strategy.

S.6 Raw inventories

In this section I substitute $News$ by the raw change in inventories ($\Delta log(Inv)$) and I re-estimate the model in Equation (3). Figures S.12 to S.15 confirm that results are almost identical to the ones presented in the paper.

S.7 Asymmetric reaction to news

Along the paper, I assume the effect of the report's information is symmetric. In other words, I consider that an inventory decrease of one standard deviation affects the market as a build-up of the same magnitude but with opposite sign. While this assumption is consistent with the stylized theoretical model, previous literature suggests that it might not be valid. For instance, traders may suffer from negative bias. In this line, Tetlock (2007) shows that high media pessimism generates downward pressure on market prices but optimism does not have an effect. Another possible channel is attention, as negative news are more salient on media outlets (see Soroka, 2006), it might affect market activity more strongly. In fact, Brown et al. (2009) presents evidence supporting this theory in the case of earnings surprises. More specific to this case, an increase in inventories might contain more, or less, information than a decrease.

To allow for heterogeneous effects depending on the sign, I estimate the following equation:

$$y_{i,t} = \mu + \delta_t + \theta_0 Oil_i + \theta_1^+ News_t^+ + \theta_1^- News_t^- + \left(\theta_2 + \theta_3^+ News_t^+ + \theta_3^- News_t^-\right) \cdot Wed_t +$$
$$\left(\gamma_0^+ News_t^+ + \gamma_0^- News_t^- + \gamma_1 Wed_t + \left(\gamma_2^+ News_t^+ + \gamma_2^- News_t^-\right) \cdot Wed_t\right) \cdot Oil_i + \varepsilon_{i,t} \quad \text{(S.1)}$$

where $News_t^- = min\{0, News_t\}$ captures the effect of positive news whereas $News_t^+ = max\{0, News_t\}$ corresponds to negative news.

In Figure S.16, I plot the estimates for every minute in the morning sample (from 10:00 a.m. to 10:59 a.m). The left and middle columns present the results for negative and positive information respectively. We observe that both cases are extremely similar. Likewise, the right column depicts the results for γ_1. Even if the violation of the symmetry assumption could affect the estimates of this parameter, the magnitude and sign of the coefficients are similar to the baseline case.

S.8 Non-linear reaction to news

An additional concern is the linearity assumption. Although smaller variations in inventories do not affect volume and spreads, extraordinary changes might. To test some possible non-linearity, I divide news content in three categories: *negative* if $News_t < -1.65$, *positive* if $News_t > 1.65$ or *zero* otherwise.[5] Then, I estimate the following regression:

$$y_{i,t} = \mu + \delta_t + \theta_0 Oil_i + \theta_1^+ pos_t - \theta_1^- neg_t + \left(\theta_2 + \theta_3^+ pos_t - \theta_3^- neg_t\right) \cdot Wed_t$$
$$+ \left(\gamma_0^+ pos_t - \gamma_0^- neg_t + \gamma_1 Wed_t + \left(\gamma_2^+ pos_t - \gamma_2^- neg_t\right) \cdot Wed_t\right) \cdot Oil_i + \varepsilon_{i,t} \quad \text{(S.2)}$$

where neg_t (pos_t) takes value one if the observation belongs to the *negative* (*positive*) group, and *zero* is the excluded category. Note that I introduce a minus sign in front of the coefficients corresponding to *negative* news, and its interactions. Thus, the symmetry assumption remains $\gamma_2^+ = \gamma_2^-$.

Figure S.17 shows that results remain unchanged under a binary identification. Further, I cannot reject that the effect is symmetric. This evidence reinforces the previous findings on the independence between the report content and the reaction of volume and spread.

[5] I select the threshold following Bernile et al. (2016); nonetheless, results do not vary using 1.75 or 2 as cutoffs.

S.8.1 Nonlinear reaction with different thresholds

I define the dummy variables using 1.65 and -1.65 as thresholds following Bernile et al. (2016); nonetheless, due to the arbitrariness of this number, I repeat the same estimation with two alternative thresholds: 1.75 and 2. Figures S.18 and S.19 confirm the results remain unaltered. Note that the estimates corresponding to *Positive* and *Negative* become noisier because their identification relies on fewer observations.

S.9 Controlling for disagreement

Bollerslev et al. (2018) and Pasquariello and Vega (2007) show that forecasts' dispersion, as a measure of disagreement, plays an important role on the effect of public announcements. The model in this paper abstracts from disagreement; therefore the empirical predictions should hold even controlling for differences in opinion. To verify this hypothesis, I construct a standardized disagreement measure ($Disag_w$) using the forecast of different institutions ($\widehat{\Delta Inv_i}$) provided by Bloomberg:

$$Disag^*_w = \frac{\max_i(\widehat{\Delta Inv_{i,w}}) - min_i(\widehat{\Delta Inv_{i,w}})}{median_i(\widehat{\Delta Inv_i})_w} \quad Disag_w = \frac{Disag^*_w - mean(Disag^*_w)}{sd(Disag^*_w)}$$

where w indicates that this variable varies across weeks and i indexes the forecaster. $median_i$, min_i and max_i refer to the median, minimum and maximum forecast for a given report; and $mean$ and sd indicate the mean and standard deviation across all reports. The resulting measure has zero mean and a standard deviation equal to one. Interacting the measure of disagreement with every variable of the baseline model leads to the following estimation equation:

$$\begin{aligned} y_{i,t} = \mu + \delta_t + \theta_0 Oil_i + \theta_1 News_t + \theta_2 Wed_t + \theta_3 Wed_t \cdot News_t + \theta_4 Disag_w + \\ (\lambda_0 Oil_i + \lambda_1 News_t + \lambda_2 Wed_t + \lambda_3 Wed_t \cdot News_t) \cdot Disag_w + \\ (\gamma_0 News_t + \gamma_1 Wed_t + \gamma_2 Wed_t \cdot News_t) \cdot Oil_i + \\ (\kappa_0 News_t + \kappa_1 Wed_t + \kappa_2 Wed_t \cdot News_t) \cdot Oil_i \cdot Disag_w + \varepsilon_{i,t} \end{aligned} \quad \text{(S.3)}$$

The model predicts that γ_1 and γ_2 should be similar to the baseline specification but it is silent about the effect of disagreement measured by κ_1 and κ_2. Table S.1 confirms that estimates are almost identical to the baseline case. Meanwhile, disagreement plays a minor role in the case of spreads and it does not affect the magnitude of the effect on volume.

It is important to emphasize that the empirical results related to disagreement support the relevance of the endogenous participation mechanism but they do not contradict previous literature. Precisely, disagreement plays an important role but it varies at a lower frequency and therefore fixed effects absorb most of the effect. Indeed, the exclusion of these effects unveils the importance of forecast dispersion without altering the remaining relevant coefficients as we can observe in Table S.3.

While Table S.1 summarizes the results. Figures S.20 to S.22 present the estimates and confidence intervals in the same fashion as the baseline results in the paper.

S.10 Including minutes without trading

The main analysis excludes minutes without trading as some variables are not defined (effective spread and log-volume). In this section, I consider two similar variables: proportional quoted bid-ask spread and volume, which are defined even in the absence of transactions. The first variable is defined as the mean of the proportional quoted spread: $QBA_t = \frac{1}{60}\sum_{i=1}^{60} \frac{2(A_{i,t}-B_{i,t})}{A_{i,t}+B_{i,t}}$ where $A_{i,t}$ and $B_{i,t}$ are the quoted spreads at the end of second i of minute t. The second variable is the number of transactions per minute. Figures S.23 and S.24 present the result of the core analysis using these new variables including minutes without trading. Although quantitative results are not comparable, qualitatively they provide the same conclusion as the estimation in the main text.

S.11 Implied Volatility

To compute the measures of implied volatility, I start with every option provided by OptionMetrics. Then, I drop those options with volume or bid quote equal to zero. I also exclude options with maturity greater than 90 days because the effect of one announcement will be negligible compared to the whole time to maturity, and those with maturity lower than 6 days to avoid changes due to the proximity to maturity. From the resulting sample, I compute the implied volatility for a given day, firm and maturity using three different approaches. The first one *OptionMetrics* ($IV^{OM}_{i,t,\tau}$) is the sample average of the implied volatility provided by OptionMetrics based on the binomial model ($\sigma_{i,t,\tau,k}$):

$$IV^{OM}_{i,t,\tau} = \frac{1}{N_k}\sum_{k=1}^{N_k}\sigma_{i,t,\tau,k}$$

where i indicates the firm, t the date, τ is the time to maturity, and k indexes strikes out of the $N_{i,t,\tau}$ available ones ordered from the lowest to the highest. The second approach follows Demeterfi et al. (1999) who provides the methodology followed to compute the VIX. Their methodology only exploits information from some options, therefore the amount of available strikes is $N'_{i,t,\tau} \leq N_{i,t,\tau}$

$$IV^{DDKZ}_{i,t,\tau} = \sqrt{\frac{360}{\tau}\left(\sum_{k=1}^{N'_k}\frac{e^{r_{t,\tau}\tau}(Q_{i,t,\tau,k}+Q_{i,t,\tau,k-1})}{K^2}(K_k-K_{k-1}) - \left(\frac{e^{r_{t,\tau}\tau}S}{K_0}-1\right)\right)}$$

where $Q_{i,t,\tau,k}$ is the midpoint quote of the option, and $S_{i,t}$ and r are the spot price and zero-coupon rate provided by OptionMetrics. K_0 is the closest strike price to the spot price and defines the options used. Only call options with strike price greater or equal than K_0 and put options with strike price lower than K_0 enter the summation.

The third measure relies on Bakshi et al. (2003):

$$IV^{BKM}_{i,t,\tau} = \sqrt{\frac{360}{\tau}(e^{r_{t,\tau}\tau}V_{i,t,\tau} - \mu^2_{i,t,\tau})}$$

$$\mu = e^{r_{t,\tau}\tau} - 1 - \frac{e^{r_{t,\tau}\tau}}{2V_{i,t,\tau}} - \frac{e^{r_{t,\tau}\tau}}{6W_{i,t,\tau}} - \frac{e^{r_{t,\tau}\tau}}{24X_{i,t,\tau}}$$

$$V_{i,t,\tau} = \sum_{K_{i,t,\tau,k}>S_{i,t}}\frac{1-ln\left(\frac{K_{i,t,\tau,k}}{S_{i,t}}\right)}{K^2_{i,t,\tau,k}}(C_{i,t,\tau,k}+C_{i,t,\tau,k-1})(K_k-K_{k-1}) + \sum_{K_{i,t,\tau,k}\leq S_{i,t}}\frac{1+ln\left(\frac{S_{i,t}}{K_{i,t,\tau,k}}\right)}{K^2_{i,t,\tau,k}}(P_{i,t,\tau,k}+P_{i,t,\tau,k-1})(K_k-K_{k-1})$$

$$W_{i,t,\tau} =$$

$$\sum_{K_{i,t,\tau,k}>S_{i,t}} \frac{6\, ln\left(\frac{K_{i,t,\tau,k}}{S_{i,t}}\right) - 3\left(ln\left(\frac{K_{i,t,\tau,k}}{S_{i,t}}\right)\right)^2}{K^2_{i,t,\tau,k}} \frac{(C_{i,t,\tau,k} + C_{i,t,\tau,k-1})}{2}(K_k - K_{k-1}) +$$

$$\sum_{K_{i,t,\tau,k}\leq S_{i,t}} \frac{6\, ln\left(\frac{K_{i,t,\tau,k}}{S_{i,t}}\right) - 3\left(ln\left(\frac{K_{i,t,\tau,k}}{S_{i,t}}\right)\right)^2}{K^2_{i,t,\tau,k}} \frac{(P_{i,t,\tau,k} + P_{i,t,\tau,k-1})}{2}(K_k - K_{k-1})$$

$$X_{i,t,\tau} =$$

$$\sum_{K_{i,t,\tau,k}>S_{i,t}} \frac{6\left(ln\left(\frac{K_{i,t,\tau,k}}{S_{i,t}}\right)\right)^2 - 2\left(ln\left(\frac{K_{i,t,\tau,k}}{S_{i,t}}\right)\right)^3}{K^2_{i,t,\tau,k}} (C_{i,t,\tau,k} + C_{i,t,\tau,k-1})(K_k - K_{k-1}) +$$

$$\sum_{K_{i,t,\tau,k}\leq S_{i,t}} \frac{6\left(ln\left(\frac{K_{i,t,\tau,k}}{S_{i,t}}\right)\right)^2 - 2\left(ln\left(\frac{K_{i,t,\tau,k}}{S_{i,t}}\right)\right)^3}{K^2_{i,t,\tau,k}} (C_{i,t,\tau,k} + C_{i,t,\tau,k-1})(K_k - K_{k-1})$$

where $C_{i,t,\tau,k}$ refers to the midpoint of call option prices and $P_{i,t,\tau,k}$ refers to put option prices.

Finally, I use a given measure if there are at least five options available to compute it; moreover, I exclude those observations that deliver a negative radicand. Table S.4 present the summary statistics for the final sample. Note that oil and non-oil firms are very similar across measures.

S.12 Insider Trading

In order to obtain the results regarding insider trading, I use all the transactions reported to the SEC from 2004 to 2017 classified as a Purchase or Sale; therefore awards, option executions, etc. are not included in the sample. To avoid extreme typos in the value of traded shares, I match the insiders' data to CRSP daily price data using the stock's ticker, and drop every transaction whose reported price differs from closing price recorded in the CRSP database by more than 30% or whose ticker does not appear in CRSP. Further, I compute the quotient of the reported value and number of shares, and drop all the observations that include an average price 30% higher or lower than the corresponding CRSP closing price. These filters do not change the results but reduce the number of outliers significantly.

Finally, I aggregate all the transactions inside a day. Consider that insiders of firm i on date t report transaction with values $V_{i,t,p}$ where p indexes the transaction. Then, the variables included in the analysis are defined as:

$$Volume_{i,t} = |\sum_p V_{i,t,p} \cdot \left(- \mathbb{1}\left\{ Sale_{i,t,p} \right\} \right)|$$

and

$$Imbalance_{i,t} = \frac{\sum_p V_{i,t,p} \cdot \left(- \mathbb{1}\left\{ Sale_{i,t,p} \right\} \right)}{\sum_p V_{i,t,p}}$$

where $\mathbb{1}\left\{ Sale \right\}$ takes value one if transaction p corresponds to a sale.

Day-firm pairs without transactions are dropped from the sample. The reason to focus on the intensive margin is twofold: First, some firms have restrictions on when insiders can trade. If these restrictions are different in oil and non-oil firms (e.g. oil insiders cannot trade before the EIA report is published), estimates would be biased. Second, the information some firms' insider have might be almost zero and would lead to very little trade. This lack of transactions due to lack of information would lead to an attenuation of the coefficients.

As a robustness check, I consider the subsample of opportunistic traders. I follow Cohen et al. (2012) and define these traders as insiders who have transacted at least once in the last three years but they have not traded in the same month three consecutive years. Note that, due to the nature of oil as a commodity, insiders might have an informational advantage that present seasonality. For instance, they might be able to predict extreme temperature better than other traders. As a consequence, routine traders might be as or more informed than opportunistic ones.

S.13 OHLC dataset

Since my available dataset only includes four oil firms, there might be a concern that the results are specific to these firms. Accordingly, I consider a supplementary dataset made up of one minute OHLC data from January 2005 to February 2015 on 265 firms.[6] The dataset includes 235 very liquid US stocks, and the 30 Dow Jones components; thus, the sample overweights energy firms (22 out of 265). Regarding the time period, the initial date makes sure that the report is published on Wednesdays at 10:30 a.m., as there is no information available prior to that date.

While this dataset has the main advantage of being a long and wide panel data, it has a drawback as it does not include information on bid-ask spreads. In fact, it only contains information on the open, close, high and low transaction prices inside a minute, as well as the number of shares traded. Nonetheless, Corwin and Schultz (2012) show that the difference between high and low (HL) is a valid proxy for bid-ask spreads. Furthermore, they develop a method to transform HL into spreads, using the fact that while the variance of return is proportional to the time length, the bid-ask spread is not. In their paper, they assume a constant variance across two consecutive time periods. If this assumption holds, the difference-in-difference strategy would actually capture the effect on spreads without the need for further transformation. Instead, if this assumption does not hold, and the report affects the fundamental volatility of the firm's fundamental value; then, the estimate would capture the effect on variance. To see this, consider the difference of HL between two consecutive periods:

$$\mathbb{E}\left[\Delta HL_t\right] = 2\kappa_1(\sigma_t^2 - \sigma_{t-1}^2) + 4\kappa_2\left[\sigma_t f(S_t) - \sigma_{t-1} f(S_{t-1})\right] + \left[f(S_t) - f(S_{t-1})\right]$$

where σ is the fundamental volatility, $f(S) = log(2+S) - log(2-S)$, S is the quoted spread and, κ_1 and κ_2 are constants. Note that under the null hypothesis that the bid-ask spread does not change ($S_t = S_{t-1}$), ΔHL_t is equal to a linear combination of the difference in variance and the difference in volatility. To absorb these terms, in all the specifications I include the square of the open to close return as a control. Therefore, although the quantitative results lack interpretation, the qualitative results are meaningful.

[6] OHLC stands for open, high, low and close. It is a dataset available at different providers, I obtained it from Pi Trading.

Table S.6 provides some summary statistics of this database. We observe that the sample is more homogeneous and it contains five times more observations. Additionally, since the sample spans a longer time period, which includes years of modest market activity, volume is lower than in the main dataset.

Figure S.25 presents the estimates of Equation (3) using this data. We observe that results are very similar in magnitude and dynamics to the baseline specification, even if both samples are different. Precisely, returns decrease by 6.6 bps after a 1 standard deviation increment on inventories and, volume increases by 41%.

S.14 Before and after 2005

The identification in Section 3 relies on the assumption that the existence of the report only affects Wednesdays. One possibility to relax it is to compare the baseline results before and after the EIA starts to release the report at 10:30 on Wednesdays. Unfortunately, the exact date of implementation is not available. Yet, before 2005 I cannot find any report or news article about oil inventories at the time the data is released nowadays. Therefore, I consider January 2005 as the implementation point. If this date is not the implementation point, we should expect similar results before and after. Figure S.26 shows that there is a very mild effect before 2005. While this evidence supports my assumption about the implementation date, it is only definitive in as far as there is no other factor that affects oil firms on Wednesdays differently in the two periods.

To compare both periods, I estimate the following regression Equation using the OHLC dataset:

$$
\begin{aligned}
y_{i,t} = \mu + \delta_t + \theta_0 Oil_i + \theta_1 News_t + \theta_2 Wed_t + \theta_3 Wed_t \cdot News_t + \\
(\kappa_1 News_t + \kappa_2 Wed_t + \kappa_3 Wed_t \cdot News_t) \cdot Oil_i \\
(\gamma_0 News_t + \gamma_1 Wed_t + \gamma_2 Wed_t \cdot News_t) \cdot Oil_i \cdot \mathbb{1}\{year_t > 2004\} + \varepsilon_{i,t} \quad \text{(S.4)}
\end{aligned}
$$

where $\mathbb{1}\{year_t > 2004\}$ takes value 1 if the observation takes place on 2005 or afterwards. As in the baseline case, I carry the estimation minute by minute using variation across firms and days. Note that I add a new layer of comparison: before and after the implementation. Therefore, the possible effect the report could have on other weekdays besides

Wednesday does not threaten the identification.

In Figure S.27, we observe that the effect is very similar to the baseline case. Precisely, returns decrease by 6.6 bps after a 1 standard deviation build-up while the report information does not affect spreads and volume. In contrast, returns do not react to the release itself whereas the high-low spread increases by 11 bps, and volume rises by 47%. Likewise, the dynamics are in line with the main results in the paper, whereas the effect on prices is immediate, volume and spreads remain high minutes after the publication.

S.15 Oil market

I use individual stocks' data in my baseline specification because it provides cross-sectional variation, even within the treatment group. Nonetheless, if the information channel is the main driver of liquidity, we expect stronger effects in the oil market itself. Hence, it is relevant to understand the effect the Weekly Petroleum Status Report has on the liquidity of instruments whose underlying is the price of crude. To pursue this aim, I obtain OHLC data for the most liquid oil ETF (USO) and gold ETF (GLD) at the minute level. The dataset is analogous to the one I describe in Section S.13 in terms of stocks.

I focus on ETFs instead of futures or other derivatives because they track the actual spot price. Moreover, other derivatives present within month variability due to maturity days that might affect the results. Nevertheless, results are almost identical using the closest-to-maturity futures, even if smaller in magnitude. Meanwhile, I consider GLD as a control for two main reasons: First, both ETFs are similar in terms of liquidity. Secondly, gold is not a substitute or complement of crude; instead, it is an investment asset.

As in the baseline specification I estimate the following regression:

$$y_{ETF,t} - y_{GLD,t} = \mu + \delta_t + \gamma_0 News_t + \gamma_1 Wed_t + \gamma_2 Wed_t \cdot News_t + \varepsilon_t$$

minute by minute. Since I lack cross-sectional variation, I work directly in differences. This empirical strategy is more restrictive as the month-year (δ_t) fixed effects capture the effect on the difference of factors without variation within a month. Additionally, I cluster standard errors at the month level to capture any remaining time series correlation.

In terms of the model, we can interpret oil prices as a firm with very low idiosyncratic volatility (σ_ε) relative to the overall volatility. Consequently, the theoretical prediction is that the announcement should affect strongly the three variables considered compared to the case of individual firms. Figure S.28 confirms this hypothesis. The first row shows that returns decrease by 10 bps after a 1 standard deviation increase in inventories. This magnitude is 1.5 times the one for stocks. At the same time, spreads rise by 36 bps instead of 11 bps. Meanwhile, volume triples at the time of the release while it boosts by 41% in the case of equity.

S.16 Tables with the estimates and standard errors by minute

To ease the exposition, in the paper I present the estimation results of the main coefficients using graphs. Tables S.7 to S.24 contain all the estimates and standard errors from the specification characterized by Equation (3). While Oil, $News$ and Wed control for the levels of the dependent variable, $Oil \cdot News$ and $Wed \cdot News$ have interesting interpretations. The former represents the difference between oil and non-oil firms conditional on inventories, and its insignificance suggests that weeks with an increase or decrease in inventories are similar except on Wednesday, which supports my identification assumptions. Likewise, the insignificant coefficient attached to $Wed \cdot News$ indicates that non-oil firms are not affected by the report.

S.17 Tables

	Return (bps)		Spread (bps)		Volume (thousands)	
	Oil	Non-Oil	Oil	Non-Oil	Oil	Non-Oil
Mean	-0.050	-0.025	3.460	4.865	34.443	69.297
Standard dev.	12.085	13.774	2.694	18.723	42.814	280.042
Median	0.000	0.000	2.772	3.364	22.300	15.700
25%	-5.184	-4.975	1.785	2.167	7.826	3.925
75%	5.168	4.930	4.285	5.531	45.200	53.109
N	390,028	4,164,529	390,028	4,164,529	390,028	4,164,529

Table S.2: Summary statistics. The table describes summary statistics of the main market variables divided into two groups: oil and non-oil firms. Oil firms are defined as those who require more than \$0.2 of crude oil to produce \$1 of output. The sample is described in Section 2. It consists of 50 randomly chosen firms stratified in two volume buckets from January 2007 to June 2013.

	10:00-10:28	10:29	10:30	10:31-10:59
		Returns		
$Wed \times Oil$	-0.07	-0.57	1.00	-0.09
	[0.07]	[0.00]	[0.00]	[0.07]
$Wed \times Oil \times News$	-0.02‡	-0.77	-5.79‡	-0.31‡
	[0.14]	[0.00]	[1.00]	[0.14]
$Wed \times Oil \times Disag$	-0.20	0.50	1.05	0.11‡
	[0.04]	[0.00]	[0.00]	[0.17]
$Wed \times Oil \times News \times Disag$	0.06	-0.30	-0.42	0.01
	[0.07]	[0.00]	[0.00]	[0.10]
		Spreads		
$Wed \times Oil$	-0.04	2.80‡	1.11‡	0.26‡
	[0.10]	[1.00]	[1.00]	[0.90]
$Wed \times Oil \times News$	-0.05	-0.24	-0.02	0.01
	[0.07]	[0.00]	[0.00]	[0.00]
$Wed \times Oil \times Disag$	0.00‡	0.06	0.31‡	0.02‡
	[0.14]	[0.00]	[1.00]	[0.14]
$Wed \times Oil \times News \times Disag$	0.01‡	-0.04	-0.18‡	-0.02
	[0.14]	[0.00]	[1.00]	[0.07]
		Volume		
$Wed \times Oil$	-0.05‡	0.30‡	0.33‡	0.07‡
	[0.52]	[1.00]	[1.00]	[0.52]
$Wed \times Oil \times News$	-0.00	-0.03	-0.03	-0.01
	[0.03]	[0.00]	[0.00]	[0.00]
$Wed \times Oil \times Disag$	0.03‡	0.03	0.04	0.02‡
	[0.45]	[0.00]	[0.00]	[0.28]
$Wed \times Oil \times News \times Disag$	-0.01‡	-0.02	-0.01	-0.02‡
	[0.14]	[0.00]	[0.00]	[0.28]

Table S.1: The effects of disagreement. This table summarizes the estimation results of the model described in equation (S.3). I cluster the standard errors at the monthly level. Inside the square brackets, I report the proportion of minutes in which I reject the null hypothesis that the coefficient is zero at the 95% significance level. ‡ indicates that the null of all estimates being equal to zero is rejected at the 95% significance level under the assumption of independence of coefficients across minutes.

	10:00-10:28	**10:29**	**10:30**	**10:31-10:59**
		Returns		
$Wed \times Oil$	-0.07	-0.57	1.00	-0.09
	[0.07]	[0.00]	[0.00]	[0.07]
$Wed \times Oil \times News$	-0.02‡	-0.77	-5.79‡	-0.31‡
	[0.14]	[0.00]	[1.00]	[0.14]
$Wed \times Oil \times Disag$	-0.20	0.51	1.05	0.11‡
	[0.04]	[0.00]	[0.00]	[0.17]
$Wed \times Oil \times News \times Disag$	0.06	-0.31	-0.42	0.01
	[0.07]	[0.00]	[0.00]	[0.10]
		Spreads		
$Wed \times Oil$	-0.04‡	2.79‡	1.11‡	0.26‡
	[0.14]	[1.00]	[1.00]	[0.90]
$Wed \times Oil \times News$	-0.05	-0.24	-0.02	0.01
	[0.07]	[0.00]	[0.00]	[0.00]
$Wed \times Oil \times Disag$	0.00‡	0.05	0.30‡	0.02‡
	[0.14]	[0.00]	[1.00]	[0.14]
$Wed \times Oil \times News \times Disag$	0.01‡	-0.04	-0.18‡	-0.02
	[0.14]	[0.00]	[1.00]	[0.07]
		Volume		
$Wed \times Oil$	-0.05‡	0.30‡	0.33‡	0.07‡
	[0.55]	[1.00]	[1.00]	[0.52]
$Wed \times Oil \times News$	-0.00	-0.03	-0.03	-0.01
	[0.03]	[0.00]	[0.00]	[0.00]
$Wed \times Oil \times Disag$	0.03‡	0.03	0.04	0.02‡
	[0.45]	[0.00]	[0.00]	[0.24]
$Wed \times Oil \times News \times Disag$	-0.01	-0.02	-0.01	-0.02‡
	[0.10]	[0.00]	[0.00]	[0.28]

Table S.3: The effects of disagreement. This table summarizes the estimation results of the model described in equation (S.3) excluding month-year fixed effects. I cluster the standard errors at the monthly level. Inside the square brackets I report the proportion of minutes in which I reject the null hypothesis that the coefficient is zero at the 5% level. ‡ indicates that the null of all estimates being equal to zero is rejected at the 5% confidence level under the assumption of independence of coefficients across minutes.

	OptionMetrics		Demeterfi et al. (1999)		Bakshi et al. (2003)	
	Oil	Non-Oil	Oil	Non-Oil	Oil	Non-Oil
Mean	70.90	72.21	60.49	63.67	60.86	63.82
Standard dev.	39.88	41.59	177.98	136.56	53.07	60.94
Median	58.70	61.41	44.65	45.69	41.71	43.03
25%	42.03	41.88	32.60	30.57	30.08	28.57
75%	90.63	93.55	71.00	73.69	71.24	75.16
N	1,122,826	15,160,834	821,678	10,655,477	824,594	10,679,571

Table S.4: Summary Statistics Implied Volatility. The table describes summary statistics of the three volatility measures divided into two groups: oil and non-oil firms. Oil firms are defined as those who require more than \$0.2 of crude oil to produce \$1 of output.

Panel A: All Traders

	Volume (thousands)		Imbalance	
	Oil	Non-Oil	Oil	Non-Oil
Mean	318.37	148.55	-0.41	-0.48
Standard dev.	5242.63	4034.38	0.91	0.88
Median	10.00	9.20	-1.00	-1.00
25%	3.00	2.50	-1.00	-1.00
75%	32.70	28.06	1.00	1.00
N	19,223	394,790	19,223	394,790

Panel B: Opportunistic Traders

	Volume (thousands)		Imbalance	
	Oil	Non-Oil	Oil	Non-Oil
Mean	246.20	125.63	-0.38	-0.48
Standard dev.	3519.22	2196.20	0.92	0.88
Median	10.00	8.00	-1.00	-1.00
25%	3.00	2.30	-1.00	-1.00
75%	30.00	25.00	1.00	1.00
N	10,550	212,160	10,550	212,160

Table S.5: Summary Statistics Insider Trading. The table describes summary statistics of the variables used to analyze insider trading divided into two groups: oil and non-oil firms. Oil firms are defined as those who require more than \$0.2 of crude oil to produce \$1 of output. The upper panel use shares transacted while the lower panel relies on value transacted

	Return (bps)		Spread (bps)		Volume (thousands)	
	Oil	Non-Oil	Oil	Non-Oil	Oil	Non-Oil
Mean	-0.032	-0.061	14.744	16.022	24.576	22.229
Standard dev.	13.690	14.030	14.695	13.689	44.765	29.525
Median	0.000	0.000	10.556	12.492	8.825	12.852
25%	-5.670	-6.484	5.492	7.098	2.932	5.100
75%	5.632	6.408	18.948	20.562	24.400	27.800
N	30,610,000	3,077,000	30,610,000	3,077,000	30,610,000	3,077,000

Table S.6: Summary statistics 1m. The table describes summary statistics of the main market variables divided into two groups: oil and non-oil firms. Oil firms are defined as those who require more than 0.2$ of crude oil to produce 1$ of output. The sample is described in Section S.13. Spread refers to the difference between the highest and lowest price inside a minute.

Time	Oil	$News$	$Oil \cdot News$	Wed	$Wed\times$ Oil	$Wed\times$ $News$	$Wed\times$ $Oil \cdot News$
10:00	-0.22	-0.36	0.30	-0.79	0.36	-0.00	-0.60
	(0.25)	(0.39)	(0.23)	(0.68)	(0.51)	(0.69)	(0.42)
10:01	-0.14	-0.05	0.22	0.35	0.06	0.59	-0.44
	(0.19)	(0.22)	(0.23)	(0.59)	(0.55)	(0.52)	(0.54)
10:02	0.39	-0.08	0.35	-0.51	-0.83	0.30	0.46
	(0.24)	(0.20)	(0.23)	(0.48)	(0.43)	(0.35)	(0.48)
10:03	-0.27	0.15	0.17	0.17	0.29	-0.46	-0.37
	(0.25)	(0.19)	(0.21)	(0.46)	(0.44)	(0.45)	(0.50)
10:04	0.04	-0.06	0.02	0.23	-0.02	-0.63	-0.15
	(0.22)	(0.26)	(0.21)	(0.40)	(0.50)	(0.46)	(0.48)
10:05	-0.04	0.01	**0.46**	-0.15	-0.14	**-1.17**	-0.62
	(0.23)	(0.19)	(0.21)	(0.43)	(0.51)	(0.44)	(0.43)
10:06	0.16	0.04	-0.10	0.28	0.57	**-0.93**	0.08
	(0.22)	(0.21)	(0.18)	(0.42)	(0.42)	(0.42)	(0.44)
10:07	0.30	0.02	0.03	0.36	0.28	-0.33	0.01
	(0.17)	(0.22)	(0.16)	(0.37)	(0.38)	(0.31)	(0.37)
10:08	0.09	0.32	0.12	-0.50	0.26	-0.46	-0.46
	(0.23)	(0.18)	(0.16)	(0.38)	(0.43)	(0.37)	(0.34)
10:09	0.26	0.17	-0.04	**-0.82**	**-1.00**	-0.18	-0.20
	(0.19)	(0.18)	(0.19)	(0.39)	(0.38)	(0.37)	(0.33)
10:10	0.03	0.34	0.20	0.08	-0.29	-0.24	-0.24
	(0.19)	(0.18)	(0.18)	(0.42)	(0.38)	(0.35)	(0.37)
10:11	-0.20	0.06	-0.41	-0.69	0.29	0.20	**0.92**
	(0.22)	(0.20)	(0.28)	(0.37)	(0.39)	(0.33)	(0.46)
10:12	-0.29	-0.23	0.05	0.40	0.17	0.49	0.34
	(0.19)	(0.16)	(0.17)	(0.38)	(0.32)	(0.37)	(0.45)
10:13	-0.02	0.26	0.18	-0.07	-0.28	0.11	-0.54
	(0.17)	(0.17)	(0.20)	(0.35)	(0.35)	(0.37)	(0.35)
10:14	0.25	**-0.31**	0.26	0.60	-0.08	0.31	**-1.13**
	(0.17)	(0.16)	(0.19)	(0.41)	(0.39)	(0.38)	(0.45)
10:15	0.13	-0.34	0.24	**0.85**	-0.26	0.08	**-0.74**
	(0.17)	(0.20)	(0.21)	(0.42)	(0.37)	(0.40)	(0.32)
10:16	0.04	0.30	-0.13	-0.39	-0.49	-0.65	-0.42
	(0.20)	(0.20)	(0.18)	(0.35)	(0.35)	(0.40)	(0.33)
10:17	0.37	0.16	0.13	-0.58	**-0.76**	-0.02	0.27
	(0.19)	(0.16)	(0.15)	(0.36)	(0.35)	(0.33)	(0.45)
10:18	0.22	0.06	0.16	0.04	-0.54	0.11	0.15
	(0.18)	(0.14)	(0.18)	(0.30)	(0.40)	(0.27)	(0.42)
10:19	0.04	-0.01	**-0.32**	-0.05	0.49	-0.07	0.03
	(0.17)	(0.17)	(0.16)	(0.32)	(0.37)	(0.35)	(0.45)

Table S.7: Returns from 10:00 a.m. to 10:19 a.m. These estimates correspond to Equation (3) using returns as the dependent variable. Standard errors are presented in parenthesis. Bold numbers refer to estimates significantly different from zero at the 5% level.

Time	Oil	$News$	$Oil \cdot News$	Wed	$Wed\times$ Oil	$Wed\times$ $News$	$Wed\times$ $Oil \cdot News$
10:20	-0.04 (0.16)	-0.02 (0.15)	0.08 (0.21)	0.16 (0.35)	0.33 (0.33)	-0.36 (0.33)	0.13 (0.32)
10:21	0.28 (0.17)	-0.18 (0.18)	0.18 (0.17)	-0.31 (0.41)	-0.03 (0.32)	0.31 (0.41)	0.38 (0.35)
10:22	0.06 (0.17)	-0.05 (0.13)	-0.24 (0.18)	-0.64 (0.37)	-0.08 (0.36)	-0.13 (0.30)	0.44 (0.37)
10:23	-0.02 (0.18)	0.15 (0.16)	-0.06 (0.19)	-0.09 (0.35)	-0.26 (0.31)	0.12 (0.35)	-0.16 (0.38)
10:24	-0.02 (0.19)	-0.13 (0.18)	-0.03 (0.21)	-0.03 (0.41)	0.08 (0.31)	0.14 (0.44)	-0.30 (0.29)
10:25	0.09 (0.16)	-0.01 (0.13)	-0.11 (0.17)	-0.26 (0.34)	0.03 (0.39)	0.03 (0.31)	0.50 (0.35)
10:26	0.06 (0.15)	0.23 (0.14)	0.18 (0.19)	-0.29 (0.33)	0.08 (0.37)	-0.35 (0.33)	-0.14 (0.35)
10:27	-0.11 (0.17)	0.21 (0.16)	-0.28 (0.15)	-0.28 (0.33)	0.01 (0.35)	-0.05 (0.24)	0.18 (0.36)
10:28	-0.24 (0.15)	0.09 (0.16)	-0.07 (0.15)	0.37 (0.29)	0.09 (0.32)	-0.03 (0.29)	-0.01 (0.34)
10:29	0.08 (0.14)	-0.02 (0.15)	0.19 (0.19)	**0.75** (0.28)	-0.60 (0.34)	-0.09 (0.30)	-0.58 (0.39)
10:30	**-0.49** (0.22)	-0.22 (0.20)	-0.37 (0.23)	-0.40 (0.35)	0.74 (0.75)	-0.18 (0.43)	**-5.38** (0.99)
10:31	-0.06 (0.20)	-0.32 (0.18)	-0.11 (0.20)	0.10 (0.35)	-0.71 (0.64)	0.39 (0.35)	-1.24 (0.63)
10:32	0.21 (0.16)	**-0.42** (0.18)	**-0.40** (0.20)	-0.36 (0.33)	-0.92 (0.51)	-0.05 (0.36)	-1.07 (0.57)
10:33	-0.02 (0.15)	-0.26 (0.14)	-0.18 (0.17)	-0.32 (0.33)	**-0.97** (0.46)	-0.28 (0.33)	-0.25 (0.43)
10:34	0.13 (0.18)	0.20 (0.18)	-0.19 (0.18)	0.08 (0.26)	-0.16 (0.46)	0.10 (0.25)	-0.21 (0.48)
10:35	-0.25 (0.20)	0.11 (0.16)	-0.12 (0.15)	-0.33 (0.30)	0.28 (0.42)	**0.83** (0.37)	**-2.18** (0.84)
10:36	-0.31 (0.20)	0.00 (0.14)	-0.07 (0.16)	0.15 (0.33)	-0.61 (0.55)	0.42 (0.33)	-0.41 (0.57)
10:37	-0.10 (0.16)	-0.05 (0.15)	-0.14 (0.15)	-0.02 (0.33)	-0.45 (0.47)	0.21 (0.38)	-0.50 (0.38)
10:38	-0.16 (0.16)	-0.02 (0.18)	0.05 (0.17)	-0.20 (0.29)	0.28 (0.56)	**0.75** (0.32)	0.28 (0.48)
10:39	-0.09 (0.15)	0.08 (0.11)	0.07 (0.16)	-0.31 (0.32)	0.59 (0.47)	0.38 (0.23)	-0.23 (0.53)

Table S.8: Returns from 10:20 a.m. to 10:39 a.m. These estimates correspond to Equation (3) using returns as the dependent variable. Standard errors are presented in parenthesis. Bold numbers refer to estimates significantly different from zero at the 5% level.

					$Wed\times$		
Time	Oil	$News$	$Oil \cdot News$	Wed	Oil	$News$	$Oil \cdot News$
10:40	0.10	0.14	-0.05	0.34	-0.18	-0.27	-0.82
	(0.17)	(0.14)	(0.12)	(0.34)	(0.39)	(0.32)	(0.42)
10:41	-0.03	0.17	-0.13	0.38	-0.12	-0.03	-0.11
	(0.18)	(0.15)	(0.15)	(0.37)	(0.45)	(0.39)	(0.50)
10:42	0.02	-0.16	-0.18	-0.33	-0.20	0.06	0.92
	(0.18)	(0.16)	(0.15)	(0.37)	(0.39)	(0.35)	(0.48)
10:43	-0.14	0.07	0.08	-0.14	0.22	0.20	0.50
	(0.14)	(0.16)	(0.13)	(0.32)	(0.37)	(0.36)	(0.35)
10:44	0.02	0.25	0.17	0.25	-0.47	0.01	-0.26
	(0.14)	(0.13)	(0.13)	(0.33)	(0.40)	(0.40)	(0.40)
10:45	**-0.34**	0.21	0.17	0.21	-0.09	-0.00	0.08
	(0.16)	(0.16)	(0.17)	(0.36)	(0.36)	(0.31)	(0.37)
10:46	0.01	-0.05	-0.17	-0.07	**-0.91**	0.19	0.49
	(0.14)	(0.19)	(0.14)	(0.32)	(0.38)	(0.32)	(0.34)
10:47	-0.00	-0.07	-0.04	**-0.64**	-0.01	0.01	**-0.76**
	(0.18)	(0.14)	(0.15)	(0.30)	(0.35)	(0.28)	(0.37)
10:48	0.10	0.08	0.07	-0.49	0.28	-0.21	-0.12
	(0.15)	(0.15)	(0.19)	(0.32)	(0.36)	(0.37)	(0.39)
10:49	0.02	0.04	-0.02	-0.34	0.43	-0.31	-0.35
	(0.20)	(0.15)	(0.20)	(0.34)	(0.39)	(0.30)	(0.38)
10:50	-0.12	-0.15	0.07	-0.15	0.53	-0.04	-0.64
	(0.15)	(0.14)	(0.20)	(0.30)	(0.35)	(0.26)	(0.43)
10:51	-0.10	-0.02	0.09	0.11	0.13	-0.11	-0.55
	(0.16)	(0.16)	(0.17)	(0.32)	(0.38)	(0.34)	(0.46)
10:52	-0.00	0.24	-0.03	-0.13	-0.08	0.08	-0.33
	(0.14)	(0.14)	(0.15)	(0.27)	(0.33)	(0.29)	(0.42)
10:53	0.09	**0.35**	-0.18	0.41	-0.05	-0.06	0.42
	(0.14)	(0.13)	(0.16)	(0.37)	(0.34)	(0.27)	(0.38)
10:54	0.05	0.18	-0.02	0.31	0.12	-0.13	-0.21
	(0.15)	(0.13)	(0.18)	(0.26)	(0.35)	(0.26)	(0.39)
10:55	-0.06	0.14	-0.01	0.14	0.36	-0.23	**0.67**
	(0.14)	(0.13)	(0.13)	(0.34)	(0.36)	(0.27)	(0.32)
10:56	0.05	0.16	-0.15	0.02	0.38	-0.32	0.38
	(0.15)	(0.16)	(0.16)	(0.26)	(0.33)	(0.37)	(0.31)
10:57	0.20	0.08	0.06	0.22	0.01	0.20	-0.22
	(0.15)	(0.15)	(0.16)	(0.29)	(0.39)	(0.30)	(0.43)
10:58	-0.01	0.07	-0.03	0.49	-0.16	-0.06	0.03
	(0.16)	(0.13)	(0.15)	(0.29)	(0.37)	(0.35)	(0.31)
10:59	-0.31	**0.23**	0.11	0.15	0.62	-0.16	-0.28
	(0.17)	(0.11)	(0.13)	(0.26)	(0.34)	(0.27)	(0.33)

Table S.9: Returns from 10:40 a.m. to 10:59 a.m. These estimates correspond to Equation (3) using returns as the dependent variable. Standard errors are presented in parenthesis. Bold numbers refer to estimates significantly different from zero at the 5% level.

Time	*Oil*	*News*	*Oil · News*	*Wed*	*Wed*× *Oil*	*Wed*× *News*	*Wed*× *Oil · News*
15:00	2.39	1.37	0.01	4.30	**13.55**	7.69	0.88
	(2.17)	(2.24)	(2.07)	(4.43)	(4.28)	(5.24)	(5.25)
15:01	-0.09	-0.19	-0.07	-0.24	-0.28	-0.47	0.07
	(0.11)	(0.16)	(0.10)	(0.55)	(0.26)	(0.48)	(0.29)
15:02	0.01	-0.03	0.19	0.12	0.42	-0.39	-0.23
	(0.13)	(0.14)	(0.10)	(0.32)	(0.28)	(0.29)	(0.21)
15:03	0.04	-0.07	0.07	-0.24	0.03	-0.58	-0.16
	(0.12)	(0.18)	(0.12)	(0.28)	(0.28)	(0.32)	(0.25)
15:04	-0.04	0.10	0.10	-0.25	-0.17	**-0.67**	0.06
	(0.13)	(0.14)	(0.09)	(0.35)	(0.24)	(0.32)	(0.24)
15:05	-0.04	-0.00	0.07	0.03	0.15	-0.01	0.18
	(0.11)	(0.12)	(0.11)	(0.35)	(0.23)	(0.33)	(0.23)
15:06	-0.12	0.10	-0.02	0.29	0.36	-0.32	0.36
	(0.12)	(0.14)	(0.12)	(0.34)	(0.25)	(0.25)	(0.25)
15:07	-0.06	0.14	0.07	0.14	0.24	0.14	0.29
	(0.11)	(0.13)	(0.08)	(0.44)	(0.23)	(0.28)	(0.24)
15:08	-0.05	0.03	0.17	-0.23	-0.00	0.30	-0.26
	(0.10)	(0.13)	(0.09)	(0.32)	(0.24)	(0.30)	(0.21)
15:09	0.05	0.11	0.17	-0.48	-0.16	0.18	**-0.35**
	(0.12)	(0.14)	(0.10)	(0.37)	(0.23)	(0.31)	(0.18)
15:10	0.09	0.02	-0.08	-0.30	-0.23	-0.32	0.07
	(0.09)	(0.17)	(0.10)	(0.33)	(0.24)	(0.34)	(0.23)
15:11	-0.03	-0.06	-0.15	0.04	0.06	0.35	**0.56**
	(0.10)	(0.14)	(0.09)	(0.33)	(0.25)	(0.32)	(0.25)
15:12	0.03	-0.02	-0.15	0.11	-0.20	0.05	0.14
	(0.11)	(0.15)	(0.13)	(0.31)	(0.28)	(0.32)	(0.23)
15:13	-0.07	0.13	-0.09	-0.42	-0.18	-0.23	0.08
	(0.11)	(0.17)	(0.09)	(0.33)	(0.25)	(0.37)	(0.21)
15:14	0.07	0.16	-0.14	-0.55	0.10	-0.44	0.17
	(0.10)	(0.14)	(0.10)	(0.37)	(0.21)	(0.39)	(0.23)
15:15	-0.11	0.05	-0.02	0.13	-0.19	**-0.73**	0.03
	(0.13)	(0.14)	(0.10)	(0.34)	(0.23)	(0.35)	(0.22)
15:16	**0.23**	**-0.33**	-0.07	-0.44	-0.34	0.43	0.09
	(0.11)	(0.16)	(0.11)	(0.32)	(0.22)	(0.33)	(0.25)
15:17	-0.07	-0.10	-0.04	-0.00	0.36	0.13	-0.16
	(0.10)	(0.16)	(0.11)	(0.30)	(0.21)	(0.33)	(0.21)
15:18	-0.10	0.04	0.04	-0.14	**0.54**	-0.18	0.02
	(0.10)	(0.11)	(0.11)	(0.35)	(0.24)	(0.27)	(0.26)
15:19	-0.02	0.11	0.05	0.48	-0.05	-0.53	0.16
	(0.10)	(0.13)	(0.10)	(0.34)	(0.29)	(0.30)	(0.26)

Table S.10: Returns from 15:00 a.m. to 15:19 a.m. These estimates correspond to Equation (3) using returns as the dependent variable. Standard errors are presented in parenthesis. Bold numbers refer to estimates significantly different from zero at the 5% level.

Time	*Oil*	*News*	*Oil · News*	*Wed*	*Wed×* *Oil*	*Wed×* *News*	*Wed×* *Oil · News*
15:20	**-0.31**	-0.08	0.06	0.30	0.52	0.12	-0.19
	(0.13)	(0.16)	(0.11)	(0.35)	(0.27)	(0.33)	(0.25)
15:21	0.13	0.25	0.08	-0.22	-0.14	-0.36	0.25
	(0.11)	(0.15)	(0.11)	(0.32)	(0.21)	(0.31)	(0.20)
15:22	0.09	0.01	**0.21**	-0.30	-0.09	0.06	-0.12
	(0.13)	(0.15)	(0.10)	(0.32)	(0.22)	(0.28)	(0.21)
15:23	-0.06	0.21	0.16	-0.62	-0.18	-0.25	-0.28
	(0.12)	(0.14)	(0.10)	(0.34)	(0.22)	(0.41)	(0.25)
15:24	-0.06	0.04	0.02	-0.09	0.22	0.24	-0.10
	(0.13)	(0.15)	(0.13)	(0.29)	(0.29)	(0.29)	(0.28)
15:25	-0.10	-0.12	-0.01	0.33	0.20	0.07	0.11
	(0.11)	(0.17)	(0.12)	(0.34)	(0.22)	(0.31)	(0.20)
15:26	-0.09	-0.07	0.01	-0.19	0.03	0.12	0.11
	(0.11)	(0.15)	(0.11)	(0.32)	(0.28)	(0.32)	(0.21)
15:27	0.10	0.18	0.02	-0.31	-0.21	-0.37	0.27
	(0.12)	(0.19)	(0.09)	(0.28)	(0.30)	(0.29)	(0.22)
15:28	0.03	-0.02	**0.24**	-0.14	0.06	-0.09	0.21
	(0.12)	(0.16)	(0.10)	(0.35)	(0.23)	(0.32)	(0.21)
15:29	0.10	0.10	0.07	-0.03	-0.17	0.35	0.02
	(0.08)	(0.12)	(0.10)	(0.40)	(0.26)	(0.37)	(0.23)
15:30	-0.08	-0.14	-0.01	**-0.62**	0.29	**0.82**	-0.09
	(0.10)	(0.16)	(0.12)	(0.32)	(0.20)	(0.30)	(0.22)
15:31	0.03	-0.01	-0.02	-0.84	-0.23	-0.23	0.13
	(0.11)	(0.21)	(0.13)	(0.45)	(0.22)	(0.40)	(0.28)
15:32	0.18	-0.10	-0.08	-0.65	-0.15	**-0.66**	0.02
	(0.11)	(0.18)	(0.10)	(0.36)	(0.25)	(0.30)	(0.29)
15:33	-0.00	0.10	0.14	-0.09	-0.34	-0.17	-0.09
	(0.10)	(0.16)	(0.09)	(0.26)	(0.22)	(0.33)	(0.25)
15:34	0.01	-0.02	0.14	-0.20	-0.03	-0.10	0.09
	(0.12)	(0.13)	(0.11)	(0.46)	(0.25)	(0.37)	(0.29)
15:35	0.10	0.07	-0.06	-0.05	-0.14	-0.38	-0.13
	(0.13)	(0.16)	(0.11)	(0.37)	(0.27)	(0.33)	(0.23)
15:36	-0.03	-0.01	**-0.19**	-0.40	0.29	-0.25	0.13
	(0.13)	(0.16)	(0.08)	(0.39)	(0.28)	(0.33)	(0.23)
15:37	-0.07	0.06	-0.06	-0.31	-0.17	0.19	-0.08
	(0.10)	(0.18)	(0.10)	(0.36)	(0.20)	(0.35)	(0.17)
15:38	-0.03	-0.09	0.06	-0.23	-0.00	-0.23	-0.41
	(0.14)	(0.11)	(0.11)	(0.28)	(0.27)	(0.30)	(0.23)
15:39	0.06	**-0.33**	-0.08	0.32	-0.29	0.15	-0.31
	(0.14)	(0.12)	(0.11)	(0.36)	(0.25)	(0.39)	(0.24)

Table S.11: Returns from 15:20 a.m. to 15:39 a.m. These estimates correspond to Equation (3) using returns as the dependent variable. Standard errors are presented in parenthesis. Bold numbers refer to estimates significantly different from zero at the 5% level.

Time	*Oil*	*News*	*Oil · News*	*Wed*	*Wed*× *Oil*	*Wed*× *News*	*Wed*× *Oil · News*
15:40	0.16 (0.13)	-0.30 (0.16)	0.02 (0.12)	0.04 (0.40)	-0.28 (0.27)	-0.10 (0.37)	0.08 (0.32)
15:41	0.01 (0.12)	0.17 (0.14)	0.12 (0.14)	-0.19 (0.28)	-0.22 (0.25)	0.25 (0.30)	-0.09 (0.25)
15:42	**0.27** (0.10)	0.01 (0.17)	0.15 (0.12)	-0.10 (0.34)	-0.14 (0.23)	0.03 (0.28)	0.05 (0.21)
15:43	0.04 (0.10)	-0.24 (0.13)	-0.11 (0.08)	-0.66 (0.35)	-0.19 (0.26)	0.48 (0.39)	0.37 (0.22)
15:44	0.23 (0.13)	-0.22 (0.14)	0.07 (0.15)	-0.08 (0.25)	-0.42 (0.32)	0.50 (0.32)	0.01 (0.31)
15:45	0.03 (0.14)	-0.16 (0.18)	-0.08 (0.12)	0.03 (0.29)	-0.59 (0.31)	0.22 (0.34)	0.13 (0.21)
15:46	**-0.32** (0.13)	-0.06 (0.14)	0.12 (0.10)	0.09 (0.33)	**0.55** (0.28)	-0.22 (0.29)	0.41 (0.27)
15:47	-0.04 (0.11)	-0.19 (0.14)	-0.04 (0.11)	-0.06 (0.32)	0.23 (0.26)	-0.23 (0.28)	0.10 (0.25)
15:48	-0.12 (0.11)	-0.07 (0.14)	-0.09 (0.09)	0.06 (0.39)	0.25 (0.25)	0.03 (0.31)	-0.28 (0.19)
15:49	0.12 (0.11)	-0.14 (0.16)	0.11 (0.10)	-0.20 (0.37)	0.02 (0.22)	0.11 (0.33)	-0.22 (0.20)
15:50	**-0.34** (0.11)	0.07 (0.15)	0.00 (0.12)	-0.02 (0.29)	0.21 (0.25)	0.12 (0.33)	0.08 (0.26)
15:51	-0.02 (0.12)	-0.03 (0.17)	-0.04 (0.11)	-0.08 (0.25)	-0.28 (0.33)	0.21 (0.28)	0.08 (0.31)
15:52	0.12 (0.11)	-0.08 (0.12)	-0.02 (0.12)	-0.16 (0.31)	**-0.62** (0.19)	-0.03 (0.24)	-0.22 (0.22)
15:53	0.19 (0.10)	0.11 (0.13)	0.07 (0.11)	-0.19 (0.26)	**-0.44** (0.20)	-0.22 (0.30)	-0.36 (0.23)
15:54	-0.03 (0.11)	-0.10 (0.13)	-0.06 (0.14)	-0.11 (0.23)	-0.35 (0.23)	0.12 (0.35)	0.16 (0.29)
15:55	0.14 (0.11)	0.02 (0.14)	-0.05 (0.11)	-0.23 (0.29)	**-0.55** (0.25)	0.42 (0.33)	-0.00 (0.28)
15:56	0.15 (0.12)	-0.08 (0.14)	0.04 (0.11)	0.00 (0.35)	-0.26 (0.25)	0.46 (0.28)	-0.11 (0.26)
15:57	0.14 (0.10)	-0.06 (0.12)	-0.10 (0.12)	0.05 (0.34)	-0.22 (0.23)	0.12 (0.25)	0.17 (0.23)
15:58	**0.28** (0.11)	-0.10 (0.11)	-0.13 (0.11)	-0.41 (0.22)	**-0.86** (0.28)	**0.56** (0.26)	0.24 (0.25)
15:59	0.04 (0.10)	-0.01 (0.11)	0.05 (0.11)	-0.24 (0.29)	-0.15 (0.24)	**0.44** (0.20)	-0.03 (0.27)

Table S.12: Returns from 15:40 a.m. to 15:59 a.m. These estimates correspond to Equation (3) using returns as the dependent variable. Standard errors are presented in parenthesis. Bold numbers refer to estimates significantly different from zero at the 5% level.

Time	Oil	$News$	$Oil \cdot News$	Wed	$Wed\times$ Oil	$Wed\times$ $News$	$Wed\times$ $Oil \cdot News$
10:00	**-1.49**	0.02	0.07	-0.12	0.02	-0.10	-0.10
	(0.07)	(0.05)	(0.05)	(0.06)	(0.08)	(0.07)	(0.08)
10:01	**-1.44**	-0.00	0.06	**-0.13**	-0.05	0.01	**-0.18**
	(0.08)	(0.04)	(0.04)	(0.05)	(0.08)	(0.06)	(0.07)
10:02	**-1.36**	0.00	0.01	**-0.14**	0.01	-0.02	-0.02
	(0.07)	(0.04)	(0.04)	(0.05)	(0.08)	(0.05)	(0.07)
10:03	**-1.31**	-0.02	0.06	**-0.16**	-0.02	0.02	0.02
	(0.08)	(0.03)	(0.04)	(0.05)	(0.08)	(0.05)	(0.06)
10:04	**-1.32**	0.01	0.03	**-0.12**	-0.12	-0.04	-0.02
	(0.07)	(0.04)	(0.05)	(0.05)	(0.07)	(0.05)	(0.07)
10:05	**-1.35**	0.03	-0.01	**-0.14**	-0.03	-0.03	-0.02
	(0.07)	(0.03)	(0.04)	(0.05)	(0.06)	(0.05)	(0.07)
10:06	**-1.26**	0.00	0.07	**-0.15**	-0.03	-0.02	-0.05
	(0.07)	(0.03)	(0.05)	(0.05)	(0.07)	(0.05)	(0.07)
10:07	**-1.26**	-0.01	0.02	**-0.14**	-0.03	0.07	-0.02
	(0.07)	(0.03)	(0.04)	(0.04)	(0.07)	(0.05)	(0.07)
10:08	**-1.28**	-0.03	0.04	**-0.11**	0.04	-0.00	-0.03
	(0.07)	(0.03)	(0.05)	(0.05)	(0.06)	(0.05)	(0.06)
10:09	**-1.25**	-0.00	0.03	-0.09	-0.11	0.04	-0.01
	(0.07)	(0.03)	(0.04)	(0.05)	(0.06)	(0.05)	(0.06)
10:10	**-1.26**	-0.02	0.03	-0.08	0.02	-0.03	0.02
	(0.07)	(0.04)	(0.04)	(0.05)	(0.07)	(0.04)	(0.07)
10:11	**-1.21**	-0.02	0.04	**-0.14**	-0.07	-0.01	-0.06
	(0.06)	(0.03)	(0.04)	(0.04)	(0.07)	(0.05)	(0.07)
10:12	**-1.20**	-0.01	0.02	**-0.10**	-0.07	0.02	0.00
	(0.07)	(0.03)	(0.04)	(0.04)	(0.08)	(0.05)	(0.06)
10:13	**-1.20**	-0.02	0.06	**-0.12**	0.00	-0.01	-0.03
	(0.06)	(0.03)	(0.04)	(0.04)	(0.07)	(0.04)	(0.06)
10:14	**-1.22**	0.01	-0.02	-0.07	-0.04	-0.06	-0.07
	(0.06)	(0.03)	(0.04)	(0.05)	(0.06)	(0.05)	(0.07)
10:15	**-1.22**	-0.03	0.05	-0.03	-0.00	-0.01	-0.07
	(0.07)	(0.03)	(0.04)	(0.04)	(0.06)	(0.06)	(0.06)
10:16	**-1.21**	-0.05	0.06	-0.00	-0.08	0.01	0.00
	(0.07)	(0.03)	(0.04)	(0.05)	(0.07)	(0.04)	(0.06)
10:17	**-1.18**	-0.02	0.05	**-0.09**	-0.02	-0.02	-0.03
	(0.06)	(0.03)	(0.04)	(0.04)	(0.07)	(0.04)	(0.07)
10:18	**-1.21**	-0.04	0.05	-0.05	0.00	0.04	**-0.11**
	(0.06)	(0.03)	(0.03)	(0.04)	(0.05)	(0.04)	(0.06)
10:19	**-1.19**	-0.01	0.05	-0.06	-0.06	-0.05	-0.07
	(0.07)	(0.03)	(0.04)	(0.04)	(0.05)	(0.05)	(0.06)

Table S.13: Spreads from 10:00 a.m. to 10:19 a.m. These estimates correspond to Equation (3) using bid-ask spreads as the dependent variable. Standard errors are presented in parenthesis. Bold numbers refer to estimates significantly different from zero at the 5% level.

Time	*Oil*	*News*	*Oil · News*	*Wed*	*Wed*× *Oil*	*Wed*× *News*	*Wed*× *Oil · News*
10:20	**-1.19**	-0.00	0.04	-0.01	**-0.14**	-0.04	-0.05
	(0.06)	(0.03)	(0.03)	(0.04)	(0.05)	(0.05)	(0.07)
10:21	**-1.19**	-0.02	-0.00	-0.08	-0.09	-0.04	0.06
	(0.06)	(0.03)	(0.03)	(0.04)	(0.07)	(0.04)	(0.06)
10:22	**-1.20**	-0.00	0.06	-0.09	-0.06	-0.04	-0.05
	(0.07)	(0.03)	(0.03)	(0.05)	(0.07)	(0.05)	(0.06)
10:23	**-1.17**	-0.00	0.03	-0.06	-0.11	-0.00	-0.01
	(0.06)	(0.03)	(0.03)	(0.05)	(0.06)	(0.04)	(0.06)
10:24	**-1.17**	-0.02	0.03	-0.03	**-0.14**	0.01	-0.04
	(0.06)	(0.03)	(0.03)	(0.04)	(0.06)	(0.04)	(0.06)
10:25	**-1.17**	-0.02	0.04	-0.03	**-0.13**	0.01	-0.02
	(0.07)	(0.03)	(0.03)	(0.04)	(0.05)	(0.04)	(0.05)
10:26	**-1.21**	-0.04	0.03	-0.01	-0.05	0.02	-0.11
	(0.06)	(0.03)	(0.04)	(0.05)	(0.06)	(0.04)	(0.06)
10:27	**-1.16**	-0.04	0.05	-0.06	-0.11	0.01	-0.00
	(0.06)	(0.03)	(0.04)	(0.04)	(0.08)	(0.04)	(0.09)
10:28	**-1.17**	-0.04	0.04	-0.04	-0.04	-0.04	-0.05
	(0.07)	(0.03)	(0.04)	(0.04)	(0.06)	(0.04)	(0.07)
10:29	**-0.70**	-0.01	-0.04	**0.20**	**2.78**	0.01	-0.15
	(0.06)	(0.03)	(0.06)	(0.05)	(0.34)	(0.04)	(0.23)
10:30	**-0.94**	-0.02	-0.00	**0.18**	**1.09**	0.02	0.02
	(0.07)	(0.03)	(0.03)	(0.05)	(0.16)	(0.04)	(0.12)
10:31	**-1.05**	-0.02	0.02	0.08	**0.62**	0.01	-0.05
	(0.07)	(0.03)	(0.04)	(0.05)	(0.09)	(0.05)	(0.09)
10:32	**-1.13**	-0.03	0.00	0.06	**0.54**	-0.02	0.08
	(0.06)	(0.03)	(0.03)	(0.05)	(0.07)	(0.05)	(0.08)
10:33	**-1.07**	-0.02	-0.01	0.06	**0.40**	0.03	0.03
	(0.06)	(0.03)	(0.04)	(0.04)	(0.08)	(0.04)	(0.06)
10:34	**-1.03**	-0.02	0.01	**0.16**	**0.95**	0.05	-0.06
	(0.07)	(0.03)	(0.04)	(0.06)	(0.23)	(0.06)	(0.14)
10:35	**-1.10**	-0.04	0.01	**0.13**	**0.63**	-0.03	0.02
	(0.07)	(0.03)	(0.04)	(0.05)	(0.14)	(0.04)	(0.08)
10:36	**-1.08**	-0.05	0.02	**0.14**	**0.37**	0.01	0.03
	(0.07)	(0.03)	(0.04)	(0.04)	(0.09)	(0.04)	(0.05)
10:37	**-1.10**	-0.03	-0.01	**0.09**	**0.34**	-0.01	0.00
	(0.06)	(0.03)	(0.03)	(0.04)	(0.09)	(0.05)	(0.08)
10:38	**-1.10**	-0.05	-0.03	**0.14**	**0.34**	0.02	0.07
	(0.06)	(0.03)	(0.04)	(0.05)	(0.08)	(0.05)	(0.06)
10:39	**-1.10**	-0.03	0.04	0.06	**0.26**	-0.01	-0.07
	(0.06)	(0.03)	(0.04)	(0.04)	(0.08)	(0.04)	(0.06)

Table S.14: Spreads from 10:20 a.m. to 10:39 a.m. These estimates correspond to Equation (3) using bid-ask spreads as the dependent variable. Standard errors are presented in parenthesis. Bold numbers refer to estimates significantly different from zero at the 5% level.

Time	Oil	$News$	$Oil \cdot News$	Wed	$Wed\times$ Oil	$Wed\times$ $News$	$Wed\times$ $Oil \cdot News$
10:40	**-1.10**	-0.02	0.02	**0.12**	**0.20**	-0.01	0.02
	(0.06)	(0.03)	(0.04)	(0.04)	(0.06)	(0.05)	(0.06)
10:41	**-1.09**	-0.01	0.04	**0.13**	0.11	-0.03	-0.04
	(0.06)	(0.03)	(0.03)	(0.04)	(0.06)	(0.05)	(0.05)
10:42	**-1.04**	-0.02	-0.01	0.08	0.06	-0.01	0.00
	(0.07)	(0.03)	(0.03)	(0.05)	(0.07)	(0.04)	(0.08)
10:43	**-1.07**	-0.01	0.03	0.07	**0.20**	0.01	-0.00
	(0.06)	(0.03)	(0.04)	(0.05)	(0.07)	(0.04)	(0.05)
10:44	**-1.11**	-0.01	0.03	0.06	**0.20**	0.01	0.01
	(0.06)	(0.03)	(0.04)	(0.04)	(0.07)	(0.05)	(0.08)
10:45	**-1.09**	-0.03	0.03	0.07	0.12	0.04	-0.05
	(0.05)	(0.03)	(0.03)	(0.04)	(0.06)	(0.04)	(0.05)
10:46	**-1.07**	-0.05	0.05	-0.02	**0.19**	0.01	-0.01
	(0.05)	(0.03)	(0.03)	(0.04)	(0.07)	(0.03)	(0.05)
10:47	**-1.06**	-0.01	0.01	0.08	**0.17**	-0.01	-0.05
	(0.06)	(0.02)	(0.03)	(0.04)	(0.07)	(0.04)	(0.06)
10:48	**-1.09**	-0.04	0.00	0.05	**0.22**	0.05	-0.05
	(0.06)	(0.03)	(0.03)	(0.04)	(0.07)	(0.03)	(0.05)
10:49	**-1.14**	-0.01	0.02	0.04	**0.19**	-0.04	0.10
	(0.07)	(0.03)	(0.04)	(0.04)	(0.06)	(0.03)	(0.06)
10:50	**-1.09**	-0.01	0.01	0.05	**0.13**	-0.01	0.07
	(0.06)	(0.02)	(0.04)	(0.04)	(0.06)	(0.03)	(0.06)
10:51	**-1.13**	-0.02	0.03	0.04	**0.15**	-0.01	-0.02
	(0.06)	(0.02)	(0.03)	(0.04)	(0.06)	(0.04)	(0.05)
10:52	**-1.11**	-0.02	0.03	**0.08**	0.12	-0.01	0.05
	(0.06)	(0.03)	(0.03)	(0.04)	(0.06)	(0.03)	(0.04)
10:53	**-1.10**	-0.01	0.02	0.02	**0.14**	0.01	0.08
	(0.06)	(0.03)	(0.03)	(0.04)	(0.05)	(0.04)	(0.05)
10:54	**-1.05**	-0.01	0.04	-0.04	**0.10**	-0.01	0.03
	(0.06)	(0.03)	(0.04)	(0.04)	(0.05)	(0.03)	(0.06)
10:55	**-1.10**	-0.00	0.00	0.02	**0.15**	0.01	0.06
	(0.06)	(0.03)	(0.03)	(0.04)	(0.06)	(0.04)	(0.07)
10:56	**-1.12**	-0.00	0.05	0.03	**0.15**	0.01	0.03
	(0.06)	(0.02)	(0.03)	(0.04)	(0.06)	(0.03)	(0.05)
10:57	**-1.11**	-0.03	0.01	0.00	**0.11**	0.04	0.07
	(0.06)	(0.03)	(0.04)	(0.04)	(0.05)	(0.03)	(0.05)
10:58	**-1.09**	-0.03	0.02	0.04	**0.11**	0.01	-0.01
	(0.06)	(0.03)	(0.04)	(0.04)	(0.05)	(0.04)	(0.05)
10:59	**-0.98**	-0.03	0.00	-0.02	-0.00	-0.03	0.02
	(0.07)	(0.03)	(0.04)	(0.04)	(0.06)	(0.04)	(0.06)

Table S.15: Spreads from 10:40 a.m. to 10:59 a.m. These estimates correspond to Equation (3) using bid-ask spreads as the dependent variable. Standard errors are presented in parenthesis. Bold numbers refer to estimates significantly different from zero at the 5% level.

Time	Oil	$News$	$Oil \cdot News$	Wed	$Wed\times$ Oil	$Wed\times$ $News$	$Wed\times$ $Oil \cdot News$
15:00	**-1.39**	-0.01	0.01	0.08	0.04	0.01	-0.06
	(0.05)	(0.03)	(0.03)	(0.05)	(0.05)	(0.04)	(0.05)
15:01	**-1.39**	-0.03	0.05	0.05	0.09	-0.02	-0.02
	(0.06)	(0.03)	(0.04)	(0.05)	(0.05)	(0.05)	(0.06)
15:02	**-1.33**	-0.03	0.00	0.02	0.08	-0.00	-0.06
	(0.06)	(0.04)	(0.02)	(0.05)	(0.05)	(0.05)	(0.05)
15:03	**-1.27**	-0.03	0.02	**0.09**	-0.04	-0.02	0.02
	(0.06)	(0.03)	(0.03)	(0.04)	(0.04)	(0.04)	(0.04)
15:04	**-1.27**	-0.04	-0.01	0.04	0.01	-0.02	0.04
	(0.06)	(0.03)	(0.03)	(0.04)	(0.04)	(0.03)	(0.05)
15:05	**-1.27**	-0.05	0.05	0.08	0.04	-0.01	0.11
	(0.06)	(0.03)	(0.03)	(0.04)	(0.05)	(0.04)	(0.06)
15:06	**-1.24**	-0.03	0.05	0.02	0.08	0.05	-0.00
	(0.05)	(0.04)	(0.04)	(0.05)	(0.05)	(0.04)	(0.05)
15:07	**-1.23**	-0.04	0.01	-0.00	0.01	-0.02	-0.03
	(0.06)	(0.03)	(0.04)	(0.04)	(0.04)	(0.04)	(0.05)
15:08	**-1.26**	-0.04	0.03	0.03	0.04	0.04	0.03
	(0.05)	(0.03)	(0.03)	(0.04)	(0.06)	(0.03)	(0.04)
15:09	**-1.26**	**-0.07**	0.05	0.07	0.01	-0.01	-0.08
	(0.06)	(0.03)	(0.03)	(0.05)	(0.05)	(0.05)	(0.05)
15:10	**-1.27**	-0.06	0.03	**0.09**	0.02	-0.05	-0.00
	(0.06)	(0.03)	(0.03)	(0.04)	(0.04)	(0.04)	(0.05)
15:11	**-1.27**	-0.06	0.03	**0.10**	**0.10**	0.04	0.02
	(0.06)	(0.03)	(0.04)	(0.05)	(0.04)	(0.03)	(0.04)
15:12	**-1.23**	-0.04	0.03	0.02	**0.14**	-0.03	-0.01
	(0.06)	(0.03)	(0.03)	(0.04)	(0.05)	(0.04)	(0.04)
15:13	**-1.28**	-0.03	0.03	0.08	**0.13**	0.01	0.02
	(0.06)	(0.03)	(0.02)	(0.04)	(0.05)	(0.03)	(0.04)
15:14	**-1.22**	-0.03	0.03	0.08	0.06	-0.03	-0.01
	(0.06)	(0.03)	(0.03)	(0.05)	(0.05)	(0.04)	(0.04)
15:15	**-1.19**	**-0.08**	0.06	0.08	-0.03	0.01	-0.03
	(0.06)	(0.03)	(0.04)	(0.04)	(0.04)	(0.04)	(0.05)
15:16	**-1.24**	**-0.06**	0.04	0.08	0.06	0.02	-0.06
	(0.06)	(0.03)	(0.03)	(0.04)	(0.04)	(0.04)	(0.04)
15:17	**-1.25**	-0.04	**0.06**	0.07	-0.01	0.02	**-0.10**
	(0.06)	(0.03)	(0.03)	(0.04)	(0.04)	(0.04)	(0.03)
15:18	**-1.25**	-0.04	0.06	0.09	0.01	-0.01	-0.03
	(0.07)	(0.03)	(0.04)	(0.05)	(0.05)	(0.04)	(0.05)
15:19	**-1.25**	**-0.07**	0.06	0.04	0.01	0.02	-0.08
	(0.06)	(0.03)	(0.03)	(0.04)	(0.05)	(0.04)	(0.05)

Table S.16: Spreads from 15:00 a.m. to 15:19 a.m. These estimates correspond to Equation (3) using bid-ask spreads as the dependent variable. Standard errors are presented in parenthesis. Bold numbers refer to estimates significantly different from zero at the 5% level.

					Wed×		
Time	*Oil*	*News*	*Oil · News*	*Wed*	*Oil*	*News*	*Oil · News*
15:20	**-1.25**	-0.04	0.04	0.02	0.06	-0.00	-0.06
	(0.06)	(0.03)	(0.04)	(0.04)	(0.05)	(0.04)	(0.04)
15:21	**-1.26**	-0.04	0.05	0.05	0.09	0.01	-0.02
	(0.06)	(0.03)	(0.03)	(0.04)	(0.05)	(0.04)	(0.05)
15:22	**-1.25**	-0.05	0.05	0.09	0.01	0.03	-0.05
	(0.06)	(0.03)	(0.04)	(0.05)	(0.04)	(0.04)	(0.04)
15:23	**-1.24**	-0.03	0.02	0.07	0.06	-0.07	-0.02
	(0.05)	(0.03)	(0.03)	(0.04)	(0.04)	(0.04)	(0.05)
15:24	**-1.23**	**-0.07**	0.03	**0.12**	0.05	0.06	-0.04
	(0.05)	(0.02)	(0.03)	(0.05)	(0.05)	(0.04)	(0.04)
15:25	**-1.24**	**-0.06**	0.04	**0.11**	0.03	0.01	**-0.11**
	(0.05)	(0.03)	(0.03)	(0.04)	(0.04)	(0.04)	(0.05)
15:26	**-1.25**	-0.06	0.06	**0.11**	0.02	-0.00	-0.01
	(0.06)	(0.04)	(0.04)	(0.05)	(0.05)	(0.04)	(0.04)
15:27	**-1.23**	**-0.06**	0.03	**0.15**	0.06	0.02	-0.00
	(0.05)	(0.03)	(0.03)	(0.04)	(0.05)	(0.04)	(0.04)
15:28	**-1.25**	**-0.07**	0.04	0.03	0.04	0.00	-0.04
	(0.06)	(0.03)	(0.04)	(0.04)	(0.05)	(0.04)	(0.04)
15:29	**-1.23**	**-0.06**	0.05	0.06	0.05	-0.03	0.01
	(0.06)	(0.03)	(0.05)	(0.05)	(0.04)	(0.03)	(0.04)
15:30	**-1.24**	-0.04	0.06	0.04	0.01	-0.03	-0.05
	(0.05)	(0.03)	(0.03)	(0.04)	(0.04)	(0.04)	(0.04)
15:31	**-1.22**	**-0.07**	**0.07**	0.04	0.04	0.00	-0.07
	(0.06)	(0.03)	(0.03)	(0.05)	(0.04)	(0.04)	(0.05)
15:32	**-1.28**	**-0.07**	0.03	0.06	0.05	0.02	-0.04
	(0.06)	(0.03)	(0.03)	(0.04)	(0.05)	(0.04)	(0.04)
15:33	**-1.23**	**-0.07**	0.05	0.03	0.05	0.00	-0.06
	(0.06)	(0.03)	(0.03)	(0.05)	(0.04)	(0.03)	(0.06)
15:34	**-1.23**	-0.05	0.04	0.07	-0.02	-0.04	-0.07
	(0.06)	(0.03)	(0.04)	(0.05)	(0.04)	(0.05)	(0.04)
15:35	**-1.25**	-0.02	**0.05**	0.06	0.09	-0.02	-0.04
	(0.06)	(0.03)	(0.03)	(0.04)	(0.05)	(0.04)	(0.05)
15:36	**-1.23**	**-0.05**	0.05	0.05	-0.01	-0.01	-0.00
	(0.06)	(0.03)	(0.04)	(0.04)	(0.04)	(0.03)	(0.05)
15:37	**-1.21**	-0.05	0.06	0.01	0.00	0.03	-0.01
	(0.06)	(0.03)	(0.03)	(0.04)	(0.04)	(0.03)	(0.04)
15:38	**-1.25**	-0.05	0.04	0.05	0.02	-0.02	-0.05
	(0.06)	(0.03)	(0.03)	(0.04)	(0.04)	(0.03)	(0.04)
15:39	**-1.28**	-0.03	0.06	0.05	-0.05	-0.02	-0.06
	(0.06)	(0.03)	(0.03)	(0.05)	(0.05)	(0.04)	(0.04)

Table S.17: Spreads from 15:20 a.m. to 15:39 a.m. These estimates correspond to Equation (3) using bid-ask spreads as the dependent variable. Standard errors are presented in parenthesis. Bold numbers refer to estimates significantly different from zero at the 5% level.

Time	Oil	$News$	$Oil \cdot News$	Wed	$Wed\times$ Oil	$Wed\times$ $News$	$Wed\times$ $Oil \cdot News$
15:40	**-1.25**	-0.03	0.06	0.02	0.03	-0.03	-0.05
	(0.06)	(0.03)	(0.04)	(0.05)	(0.04)	(0.04)	(0.04)
15:41	**-1.26**	**-0.06**	0.04	0.07	0.07	0.03	0.02
	(0.06)	(0.03)	(0.03)	(0.05)	(0.04)	(0.04)	(0.05)
15:42	**-1.29**	-0.04	0.04	0.04	0.00	-0.01	-0.01
	(0.05)	(0.03)	(0.03)	(0.05)	(0.04)	(0.04)	(0.05)
15:43	**-1.30**	-0.04	0.05	0.07	0.06	-0.06	-0.01
	(0.06)	(0.03)	(0.04)	(0.05)	(0.04)	(0.04)	(0.05)
15:44	**-1.17**	-0.02	0.07	-0.00	0.01	-0.04	0.06
	(0.06)	(0.03)	(0.04)	(0.06)	(0.04)	(0.03)	(0.05)
15:45	**-1.28**	-0.03	0.06	0.00	0.04	0.01	-0.05
	(0.06)	(0.03)	(0.03)	(0.04)	(0.04)	(0.03)	(0.04)
15:46	**-1.28**	-0.03	0.08	0.03	0.00	-0.03	-0.04
	(0.06)	(0.03)	(0.04)	(0.05)	(0.04)	(0.04)	(0.05)
15:47	**-1.30**	-0.01	**0.07**	0.04	0.01	-0.01	-0.05
	(0.06)	(0.03)	(0.03)	(0.04)	(0.04)	(0.04)	(0.05)
15:48	**-1.30**	-0.03	**0.07**	0.06	-0.01	-0.02	-0.05
	(0.06)	(0.03)	(0.03)	(0.04)	(0.05)	(0.04)	(0.04)
15:49	**-1.75**	-0.01	0.04	0.05	0.07	-0.07	0.01
	(0.08)	(0.03)	(0.04)	(0.05)	(0.05)	(0.04)	(0.05)
15:50	**-1.42**	-0.02	0.05	0.02	0.07	-0.03	0.00
	(0.06)	(0.03)	(0.03)	(0.04)	(0.05)	(0.04)	(0.05)
15:51	**-1.41**	-0.01	0.02	-0.00	0.05	-0.07	-0.06
	(0.06)	(0.03)	(0.04)	(0.04)	(0.04)	(0.04)	(0.05)
15:52	**-1.42**	-0.03	0.03	0.06	0.05	-0.03	-0.00
	(0.06)	(0.03)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
15:53	**-1.45**	-0.02	0.02	0.01	0.05	0.00	-0.01
	(0.06)	(0.03)	(0.03)	(0.04)	(0.04)	(0.04)	(0.04)
15:54	**-1.39**	-0.02	0.02	0.05	0.02	-0.02	0.01
	(0.06)	(0.03)	(0.03)	(0.04)	(0.04)	(0.03)	(0.04)
15:55	**-1.49**	-0.03	0.03	0.03	0.03	-0.01	0.01
	(0.06)	(0.03)	(0.03)	(0.04)	(0.06)	(0.04)	(0.05)
15:56	**-1.51**	-0.03	0.02	0.02	0.04	-0.03	0.01
	(0.06)	(0.03)	(0.03)	(0.04)	(0.05)	(0.04)	(0.04)
15:57	**-1.55**	-0.03	0.01	0.02	-0.01	-0.01	-0.01
	(0.06)	(0.03)	(0.03)	(0.05)	(0.04)	(0.03)	(0.05)
15:58	**-1.65**	-0.03	0.01	0.01	**0.13**	-0.00	0.04
	(0.07)	(0.03)	(0.03)	(0.04)	(0.06)	(0.04)	(0.04)
15:59	**-1.87**	0.01	0.06	0.07	0.08	-0.06	0.02
	(0.09)	(0.04)	(0.06)	(0.06)	(0.08)	(0.05)	(0.07)

Table S.18: Spreads from 15:40 a.m. to 15:59 a.m. These estimates correspond to Equation (3) using bid-ask spreads as the dependent variable. Standard errors are presented in parenthesis. Bold numbers refer to estimates significantly different from zero at the 5% level.

Time	*Oil*	*News*	*Oil · News*	*Wed*	*Wed*× *Oil*	*Wed*× *News*	*Wed*× *Oil · News*
10:00	**0.26**	0.00	**0.03**	-0.01	-0.03	-0.01	-0.01
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.01)	(0.02)
10:01	**0.26**	0.01	**0.03**	-0.01	**-0.05**	-0.00	0.01
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.01)	(0.03)
10:02	**0.23**	0.00	**0.04**	0.01	**-0.05**	0.01	-0.03
	(0.02)	(0.01)	(0.02)	(0.02)	(0.02)	(0.01)	(0.02)
10:03	**0.22**	-0.00	**0.03**	-0.03	-0.03	0.02	-0.04
	(0.02)	(0.01)	(0.01)	(0.01)	(0.02)	(0.01)	(0.02)
10:04	**0.20**	-0.01	0.01	-0.01	-0.02	-0.01	0.00
	(0.02)	(0.01)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)
10:05	**0.18**	0.01	0.01	-0.01	-0.01	-0.01	-0.00
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
10:06	**0.22**	-0.00	**0.03**	-0.01	-0.04	0.01	-0.02
	(0.02)	(0.01)	(0.01)	(0.01)	(0.02)	(0.01)	(0.02)
10:07	**0.20**	-0.02	**0.03**	**-0.05**	0.00	0.02	-0.02
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.03)
10:08	**0.21**	-0.01	0.01	0.01	-0.03	-0.00	0.02
	(0.02)	(0.01)	(0.02)	(0.01)	(0.02)	(0.01)	(0.02)
10:09	**0.20**	0.00	0.01	0.01	**-0.08**	0.02	0.00
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.01)	(0.02)
10:10	**0.21**	0.00	0.01	0.02	**-0.05**	0.02	0.01
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
10:11	**0.20**	-0.01	0.02	-0.01	-0.04	0.02	-0.01
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.01)	(0.03)
10:12	**0.21**	-0.01	0.02	0.02	**-0.06**	0.02	-0.00
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
10:13	**0.22**	-0.00	0.01	0.00	**-0.06**	-0.00	0.03
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.01)	(0.02)
10:14	**0.19**	-0.00	0.02	0.02	-0.03	0.02	-0.03
	(0.02)	(0.01)	(0.02)	(0.01)	(0.02)	(0.02)	(0.02)
10:15	**0.20**	-0.01	0.02	0.01	-0.04	0.01	-0.03
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
10:16	**0.22**	**-0.02**	0.02	0.02	-0.03	0.02	0.03
	(0.02)	(0.01)	(0.01)	(0.02)	(0.03)	(0.02)	(0.02)
10:17	**0.22**	-0.00	0.01	0.00	-0.03	0.01	0.03
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.03)
10:18	**0.21**	-0.01	0.01	0.01	-0.03	0.02	0.02
	(0.02)	(0.01)	(0.02)	(0.02)	(0.02)	(0.01)	(0.02)
10:19	**0.21**	-0.00	0.03	-0.00	-0.03	-0.01	-0.01
	(0.02)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)

Table S.19: Volume from 10:00 a.m. to 10:19 a.m. These estimates correspond to Equation (3) using the logarithm of the number of transactions as the dependent variable. Standard errors are presented in parenthesis. Bold numbers refer to estimates significantly different from zero at the 5% level.

Time	*Oil*	*News*	*Oil · News*	*Wed*	*Wed*× *Oil*	*Wed*× *News*	*Wed*× *Oil · News*
10:20	**0.21**	-0.00	0.03	-0.00	-0.01	-0.01	-0.01
	(0.02)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
10:21	**0.21**	-0.01	**0.03**	0.02	-0.03	-0.00	-0.02
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.01)	(0.02)
10:22	**0.19**	-0.00	0.02	0.00	-0.03	-0.00	-0.03
	(0.03)	(0.01)	(0.02)	(0.02)	(0.03)	(0.02)	(0.02)
10:23	**0.21**	-0.01	0.02	0.02	-0.04	0.01	-0.02
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
10:24	**0.22**	-0.01	**0.03**	0.00	**-0.06**	0.01	-0.02
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
10:25	**0.21**	-0.02	**0.04**	0.00	**-0.05**	0.03	0.00
	(0.02)	(0.01)	(0.02)	(0.02)	(0.03)	(0.01)	(0.03)
10:26	**0.21**	-0.02	0.01	0.01	**-0.05**	0.01	-0.01
	(0.02)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)	(0.03)
10:27	**0.22**	**-0.02**	0.02	-0.02	**-0.07**	0.02	0.03
	(0.02)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)	(0.03)
10:28	**0.23**	-0.01	**0.03**	0.01	**-0.09**	-0.00	0.02
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.03)
10:29	**0.29**	-0.01	0.02	**0.10**	**0.29**	0.01	-0.03
	(0.02)	(0.01)	(0.01)	(0.02)	(0.04)	(0.01)	(0.03)
10:30	**0.33**	-0.00	0.02	**0.11**	**0.32**	0.02	-0.03
	(0.02)	(0.01)	(0.01)	(0.02)	(0.04)	(0.02)	(0.03)
10:31	**0.30**	-0.00	0.02	**0.07**	**0.21**	0.01	-0.02
	(0.02)	(0.01)	(0.02)	(0.02)	(0.04)	(0.02)	(0.03)
10:32	**0.29**	-0.02	0.02	**0.06**	**0.15**	0.01	-0.01
	(0.02)	(0.01)	(0.02)	(0.01)	(0.03)	(0.02)	(0.03)
10:33	**0.28**	-0.01	0.01	**0.05**	**0.16**	0.03	-0.00
	(0.02)	(0.01)	(0.01)	(0.02)	(0.03)	(0.02)	(0.03)
10:34	**0.27**	-0.01	**0.03**	**0.08**	**0.14**	-0.01	-0.03
	(0.03)	(0.01)	(0.01)	(0.02)	(0.03)	(0.02)	(0.02)
10:35	**0.30**	**-0.02**	0.03	**0.11**	**0.09**	0.02	-0.05
	(0.03)	(0.01)	(0.02)	(0.02)	(0.03)	(0.02)	(0.02)
10:36	**0.29**	**-0.02**	**0.04**	**0.10**	**0.12**	0.02	-0.02
	(0.03)	(0.01)	(0.02)	(0.02)	(0.03)	(0.02)	(0.03)
10:37	**0.27**	-0.02	**0.04**	**0.06**	**0.10**	**0.05**	-0.04
	(0.03)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)	(0.03)
10:38	**0.27**	**-0.03**	0.02	**0.08**	**0.08**	**0.04**	-0.01
	(0.03)	(0.01)	(0.02)	(0.02)	(0.03)	(0.02)	(0.03)
10:39	**0.27**	-0.01	0.02	0.03	**0.10**	**0.04**	-0.01
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.01)	(0.02)

Table S.20: Volume from 10:20 a.m. to 10:39 a.m. These estimates correspond to Equation (3) using the logarithm of the number of transactions as the dependent variable. Standard errors are presented in parenthesis. Bold numbers refer to estimates significantly different from zero at the 5% level.

Time	Oil	$News$	$Oil \cdot News$	Wed	$Wed\times$ Oil	$Wed\times$ $News$	$Wed\times$ $Oil \cdot News$
10:40	**0.26**	-0.00	0.02	**0.06**	**0.07**	**0.05**	-0.00
	(0.02)	(0.01)	(0.01)	(0.02)	(0.03)	(0.02)	(0.03)
10:41	**0.27**	-0.00	**0.04**	**0.06**	0.04	0.01	-0.02
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
10:42	**0.26**	-0.01	0.02	**0.05**	0.04	0.03	0.00
	(0.03)	(0.01)	(0.02)	(0.02)	(0.03)	(0.02)	(0.02)
10:43	**0.24**	-0.00	0.03	**0.05**	0.03	0.02	-0.04
	(0.03)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)	(0.03)
10:44	**0.23**	-0.02	0.03	**0.05**	0.05	**0.04**	-0.02
	(0.02)	(0.01)	(0.01)	(0.02)	(0.03)	(0.02)	(0.03)
10:45	**0.26**	-0.01	**0.04**	**0.05**	**0.05**	-0.00	-0.01
	(0.02)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)	(0.03)
10:46	**0.25**	-0.02	0.03	**0.06**	0.03	0.01	-0.01
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
10:47	**0.24**	-0.01	0.02	**0.06**	0.04	0.02	-0.02
	(0.03)	(0.01)	(0.02)	(0.02)	(0.03)	(0.02)	(0.02)
10:48	**0.24**	-0.01	0.02	0.04	**0.07**	0.01	-0.03
	(0.02)	(0.01)	(0.01)	(0.02)	(0.03)	(0.02)	(0.02)
10:49	**0.23**	-0.01	0.03	0.03	0.05	0.00	0.00
	(0.03)	(0.01)	(0.02)	(0.02)	(0.03)	(0.01)	(0.02)
10:50	**0.25**	-0.01	0.02	**0.05**	0.00	0.03	0.01
	(0.02)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
10:51	**0.23**	-0.01	0.01	**0.06**	0.04	0.01	0.02
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.03)
10:52	**0.23**	0.00	0.01	**0.04**	**0.06**	0.01	0.02
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
10:53	**0.23**	-0.00	0.01	0.03	**0.06**	0.03	-0.00
	(0.02)	(0.01)	(0.02)	(0.02)	(0.03)	(0.02)	(0.02)
10:54	**0.23**	-0.00	0.01	0.02	0.04	0.00	0.01
	(0.02)	(0.01)	(0.02)	(0.02)	(0.03)	(0.02)	(0.02)
10:55	**0.22**	-0.01	0.02	**0.04**	0.03	0.00	0.02
	(0.02)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)	(0.03)
10:56	**0.21**	-0.01	**0.03**	**0.05**	0.03	0.01	-0.02
	(0.03)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
10:57	**0.19**	-0.01	0.01	0.03	0.05	0.01	0.02
	(0.03)	(0.01)	(0.02)	(0.02)	(0.03)	(0.02)	(0.03)
10:58	**0.21**	-0.02	**0.03**	**0.04**	0.04	-0.01	0.01
	(0.02)	(0.01)	(0.01)	(0.02)	(0.03)	(0.02)	(0.02)
10:59	**0.25**	-0.01	0.03	0.03	-0.00	0.01	-0.00
	(0.02)	(0.01)	(0.02)	(0.02)	(0.03)	(0.02)	(0.02)

Table S.21: Volume from 10:40 a.m. to 10:59 a.m. These estimates correspond to Equation (3) using the logarithm of the number of transactions as the dependent variable. Standard errors are presented in parenthesis. Bold numbers refer to estimates significantly different from zero at the 5% level.

Time	Oil	$News$	$Oil \cdot News$	Wed	$Wed\times$ Oil	$Wed\times$ $News$	$Wed\times$ $Oil \cdot News$
15:00	**0.35**	-0.01	0.01	**0.09**	0.01	0.01	-0.00
	(0.02)	(0.01)	(0.01)	(0.02)	(0.03)	(0.02)	(0.02)
15:01	**0.38**	0.00	0.02	**0.10**	-0.03	0.01	-0.01
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
15:02	**0.34**	-0.00	0.02	**0.05**	-0.01	0.04	**-0.06**
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
15:03	**0.34**	-0.02	0.03	**0.07**	-0.03	0.03	**-0.05**
	(0.02)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
15:04	**0.32**	-0.02	0.01	**0.07**	**-0.05**	**0.04**	**-0.04**
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
15:05	**0.32**	-0.02	**0.03**	**0.07**	-0.01	0.03	-0.01
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
15:06	**0.32**	-0.01	**0.03**	**0.07**	-0.01	**0.04**	**-0.05**
	(0.02)	(0.01)	(0.01)	(0.02)	(0.03)	(0.02)	(0.02)
15:07	**0.32**	-0.02	0.02	**0.06**	-0.01	-0.02	-0.01
	(0.02)	(0.01)	(0.01)	(0.02)	(0.03)	(0.02)	(0.02)
15:08	**0.31**	-0.01	**0.03**	0.03	-0.02	0.02	0.02
	(0.02)	(0.01)	(0.01)	(0.02)	(0.03)	(0.02)	(0.02)
15:09	**0.30**	**-0.03**	**0.03**	**0.08**	-0.03	0.00	0.02
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
15:10	**0.32**	-0.01	0.02	**0.09**	-0.02	-0.02	-0.01
	(0.02)	(0.01)	(0.01)	(0.02)	(0.03)	(0.02)	(0.02)
15:11	**0.32**	**-0.03**	**0.04**	**0.13**	-0.02	**0.06**	**-0.04**
	(0.02)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
15:12	**0.31**	-0.02	0.03	**0.07**	-0.02	0.00	-0.04
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
15:13	**0.30**	-0.02	0.02	**0.09**	0.00	0.03	-0.03
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
15:14	**0.33**	-0.02	**0.04**	**0.07**	-0.01	0.02	**-0.06**
	(0.02)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)	(0.03)
15:15	**0.31**	**-0.03**	**0.04**	**0.08**	0.01	0.03	-0.04
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
15:16	**0.29**	**-0.03**	0.03	**0.06**	0.03	**0.06**	-0.02
	(0.02)	(0.01)	(0.01)	(0.02)	(0.03)	(0.02)	(0.02)
15:17	**0.29**	**-0.03**	**0.03**	**0.06**	0.02	**0.04**	-0.01
	(0.02)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
15:18	**0.29**	**-0.02**	**0.03**	**0.09**	**0.05**	**0.04**	0.02
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
15:19	**0.31**	-0.02	**0.04**	**0.07**	-0.00	0.01	-0.01
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)

Table S.22: Volume from 15:00 a.m. to 15:19 a.m. These estimates correspond to Equation (3) using the logarithm of the number of transactions as the dependent variable. Standard errors are presented in parenthesis. Bold numbers refer to estimates significantly different from zero at the 5% level.

Time	Oil	$News$	$Oil \cdot News$	Wed	$Wed\times$ Oil	$Wed\times$ $News$	$Wed\times$ $Oil \cdot News$
15:20	**0.32**	**-0.03**	**0.03**	**0.06**	0.01	0.02	-0.00
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
15:21	**0.32**	-0.00	**0.04**	**0.08**	0.01	-0.01	-0.00
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
15:22	**0.34**	-0.02	**0.04**	**0.09**	-0.01	0.03	**-0.04**
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
15:23	**0.34**	-0.01	0.02	**0.04**	0.00	-0.01	-0.03
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
15:24	**0.34**	**-0.03**	**0.03**	**0.08**	**-0.04**	**0.05**	**-0.05**
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
15:25	**0.33**	-0.00	**0.02**	**0.06**	0.01	0.01	-0.03
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
15:26	**0.35**	-0.01	**0.03**	**0.07**	**-0.05**	-0.00	-0.02
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
15:27	**0.35**	-0.01	**0.03**	**0.07**	0.00	-0.00	-0.04
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
15:28	**0.35**	**-0.02**	**0.03**	**0.06**	-0.02	0.00	-0.01
	(0.02)	(0.01)	(0.01)	(0.02)	(0.03)	(0.02)	(0.02)
15:29	**0.35**	-0.01	**0.03**	**0.06**	-0.03	0.00	0.01
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
15:30	**0.34**	0.00	**0.03**	0.03	-0.02	0.01	0.00
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
15:31	**0.37**	-0.02	**0.03**	**0.06**	-0.01	0.03	-0.04
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
15:32	**0.35**	-0.01	**0.03**	**0.04**	0.00	0.02	-0.02
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
15:33	**0.35**	-0.02	0.02	0.03	0.00	0.00	-0.02
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
15:34	**0.34**	-0.01	**0.03**	**0.04**	0.00	0.01	-0.02
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
15:35	**0.36**	-0.00	0.02	**0.07**	0.00	0.02	0.00
	(0.02)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
15:36	**0.35**	**-0.02**	**0.03**	**0.05**	-0.02	0.02	0.00
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
15:37	**0.34**	-0.01	**0.03**	0.03	0.00	**0.04**	**-0.04**
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
15:38	**0.35**	-0.01	0.02	0.02	0.01	-0.01	-0.01
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
15:39	**0.34**	0.01	0.02	**0.03**	0.00	0.01	0.00
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)

Table S.23: Volume from 15:20 a.m. to 15:39 a.m. These estimates correspond to Equation (3) using the logarithm of the number of transactions as the dependent variable. Standard errors are presented in parenthesis. Bold numbers refer to estimates significantly different from zero at the 5% level.

Time	Oil	$News$	$Oil \cdot News$	Wed	$Wed\times$ Oil	$Wed\times$ $News$	$Wed\times$ $Oil \cdot News$
15:40	**0.38**	-0.00	0.02	**0.05**	0.00	0.00	-0.00
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
15:41	**0.37**	-0.01	0.01	**0.04**	0.01	0.02	0.01
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
15:42	**0.37**	-0.00	0.02	0.02	-0.00	0.02	-0.03
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
15:43	**0.38**	-0.01	**0.03**	0.03	0.02	0.00	-0.01
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
15:44	**0.41**	0.00	0.02	-0.00	-0.03	-0.00	-0.01
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.01)	(0.02)
15:45	**0.40**	0.00	0.02	0.01	-0.00	-0.01	-0.01
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.01)	(0.02)
15:46	**0.38**	0.00	**0.03**	0.02	0.01	-0.00	-0.01
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.01)	(0.02)
15:47	**0.38**	0.00	**0.03**	**0.04**	-0.03	0.02	-0.02
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
15:48	**0.38**	-0.01	**0.03**	0.03	-0.02	0.01	0.00
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.01)	(0.02)
15:49	**0.24**	-0.00	0.01	0.02	-0.00	-0.01	0.01
	(0.02)	(0.01)	(0.01)	(0.02)	(0.01)	(0.01)	(0.02)
15:50	**0.42**	0.00	0.02	0.02	-0.01	-0.01	-0.01
	(0.03)	(0.01)	(0.01)	(0.02)	(0.02)	(0.01)	(0.02)
15:51	**0.45**	-0.00	**0.03**	0.02	0.00	-0.01	0.00
	(0.02)	(0.01)	(0.02)	(0.01)	(0.02)	(0.01)	(0.02)
15:52	**0.45**	-0.01	0.01	0.03	-0.01	0.01	-0.01
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
15:53	**0.44**	-0.00	0.00	0.01	-0.01	0.00	0.02
	(0.02)	(0.01)	(0.01)	(0.01)	(0.02)	(0.01)	(0.02)
15:54	**0.43**	-0.00	**0.02**	0.02	0.01	0.01	0.02
	(0.02)	(0.01)	(0.01)	(0.01)	(0.02)	(0.01)	(0.02)
15:55	**0.39**	-0.01	**0.03**	0.02	-0.02	-0.01	0.00
	(0.02)	(0.01)	(0.01)	(0.01)	(0.02)	(0.01)	(0.02)
15:56	**0.36**	-0.01	0.02	0.01	0.01	0.00	-0.01
	(0.02)	(0.01)	(0.01)	(0.01)	(0.02)	(0.01)	(0.02)
15:57	**0.35**	-0.01	**0.02**	0.01	-0.01	-0.00	0.00
	(0.02)	(0.01)	(0.01)	(0.01)	(0.02)	(0.01)	(0.02)
15:58	**0.33**	-0.01	0.02	0.00	0.02	0.01	0.02
	(0.02)	(0.01)	(0.01)	(0.01)	(0.02)	(0.01)	(0.02)
15:59	**-0.34**	0.00	0.00	-0.02	0.02	-0.00	0.00
	(0.02)	(0.01)	(0.01)	(0.01)	(0.02)	(0.01)	(0.02)

Table S.24: Volume from 15:40 a.m. to 15:59 a.m. These estimates correspond to Equation (3) using the logarithm of the number of transactions as the dependent variable. Standard errors are presented in parenthesis. Bold numbers refer to estimates significantly different from zero at the 5% level.

S.18 Figures

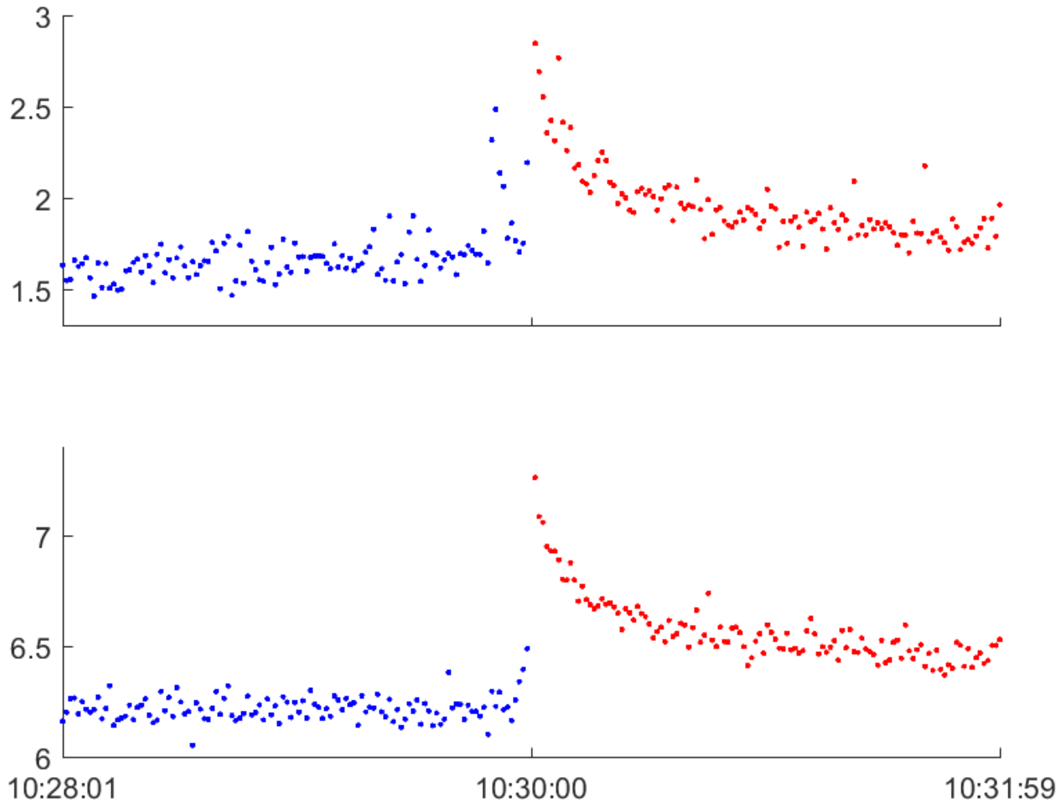


Figure S.3: Bid-Ask spread and Volume Around 10:30 a.m. This figure presents the mean spread (top), and volume (bottom) for each second, around 10:30 a.m. The sample is described in Section 2, and this graph only considers Wednesdays and oil firms.

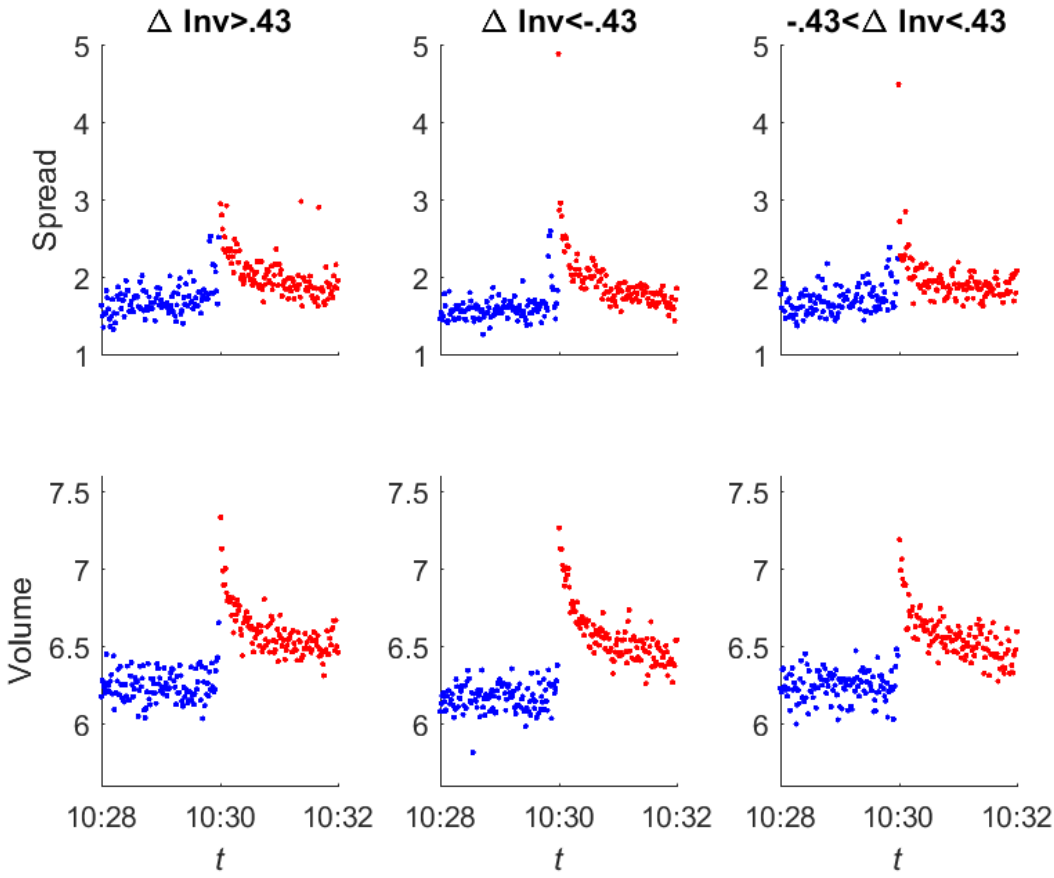
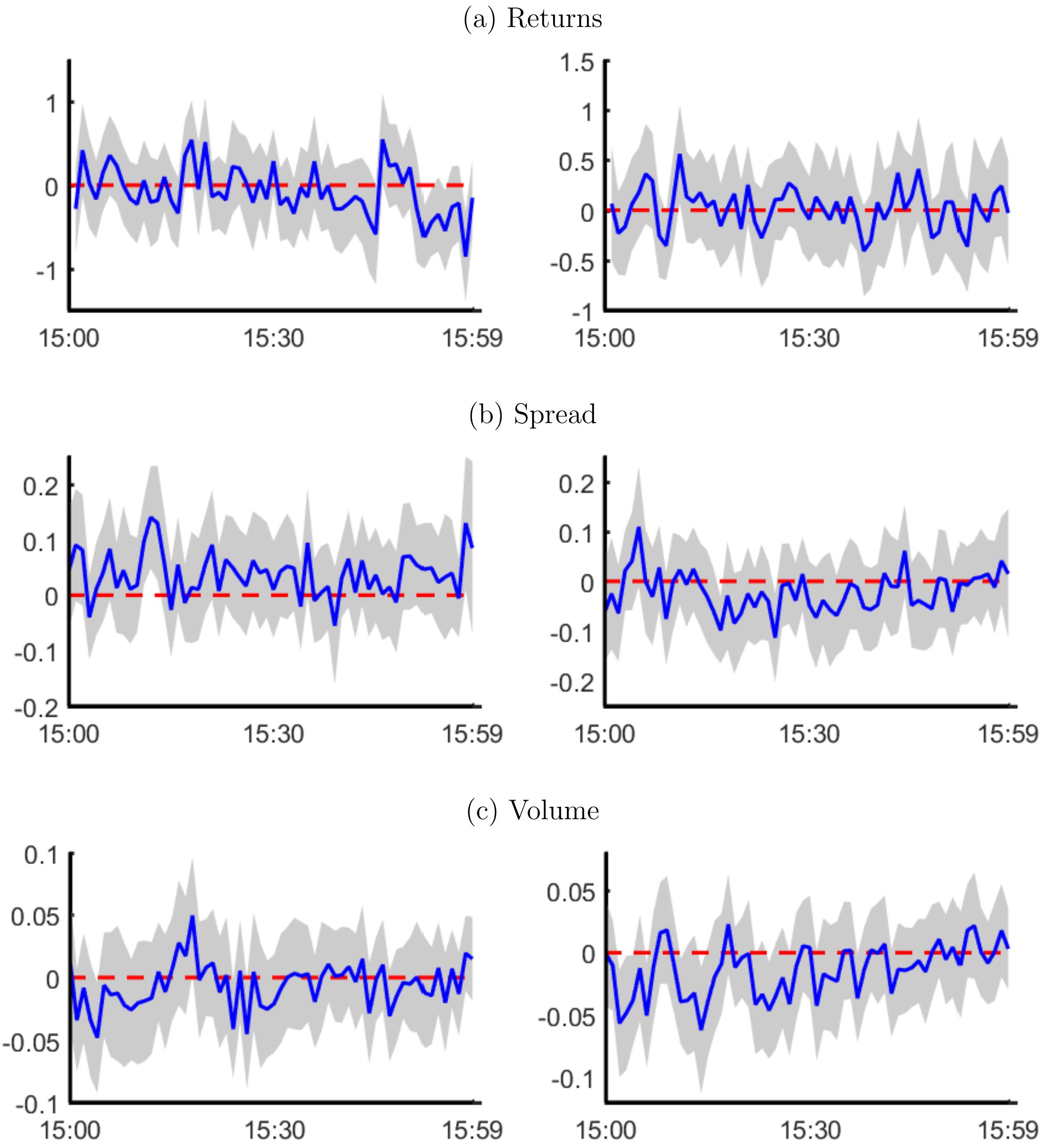


Figure S.4: Spread and Volume Around 10:30 a.m. This figure presents the mean spread (top), and volume (bottom) for each second, around 10:30 a.m. In the first column I plot the mean across days in which *News* is exceeds .43 while the middle column present the means when this measure is less than -.43. Similarly, the mean of the remaining days is presented in the right column. The sample is described in Section 2, and this graph only considers Wednesdays and oil firms.

$Wed \cdot Oil\ \ (\gamma_1)$ $Wed \cdot Oil \cdot News\ \ (\gamma_2)$



	Returns		Spread		Volume	
	γ_1	γ_2	γ_1	γ_2	γ_1	γ_2
Mean	-0.07	0.02	0.04	-0.02	-0.01	$-0.01^{\ddagger}$
Rejections	0.10	0.03	0.07	0.03	0.07	0.15

Figure S.2: Afternoon Sample. This figure plots the estimates (blue line) and their 95 % confidence interval (grey area) of the model described in equation (3). Each row considers a different dependent variable. The table at the bottom summarizes the mean estimates and the proportion of minutes in which we can reject that the parameter equals zero at the 5% significance level. ‡ indicates that the null of all the estimates being equal to zero is rejected at the 5% significance level under the assumption of independence of coefficients across minutes.

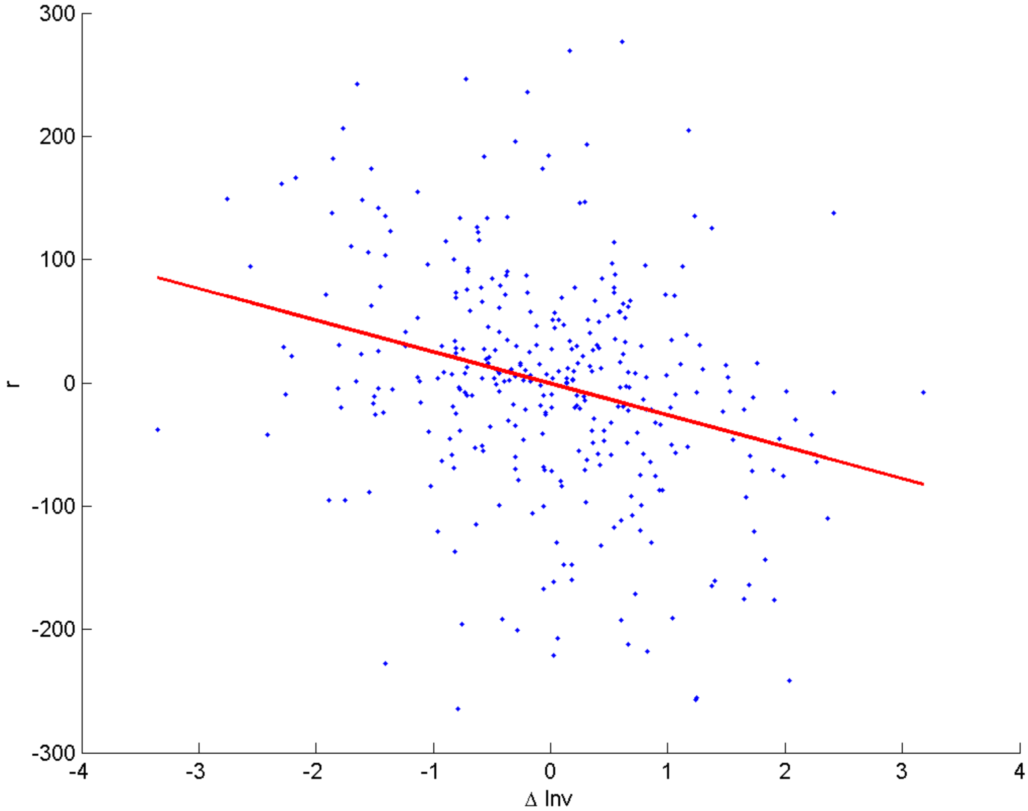
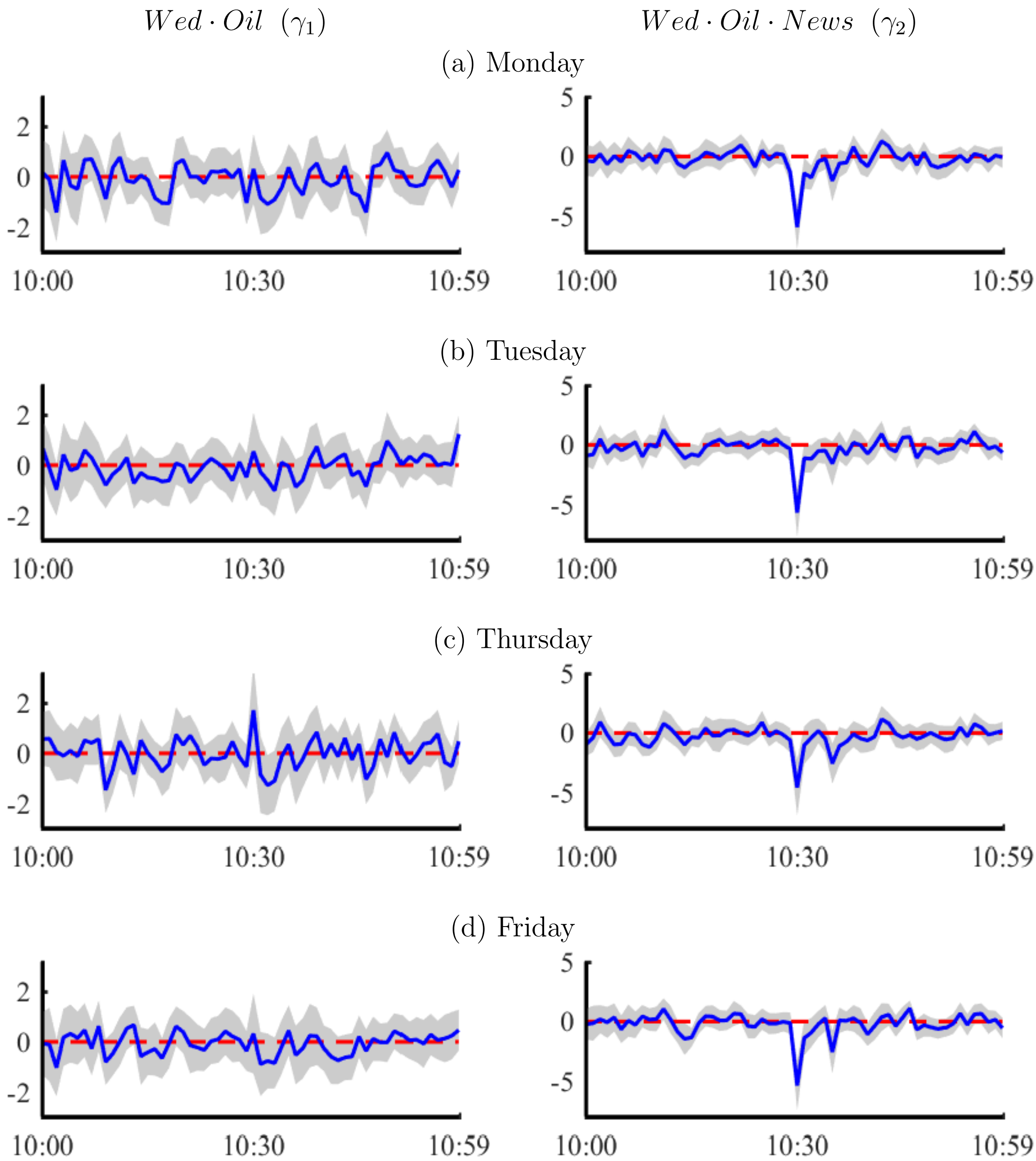
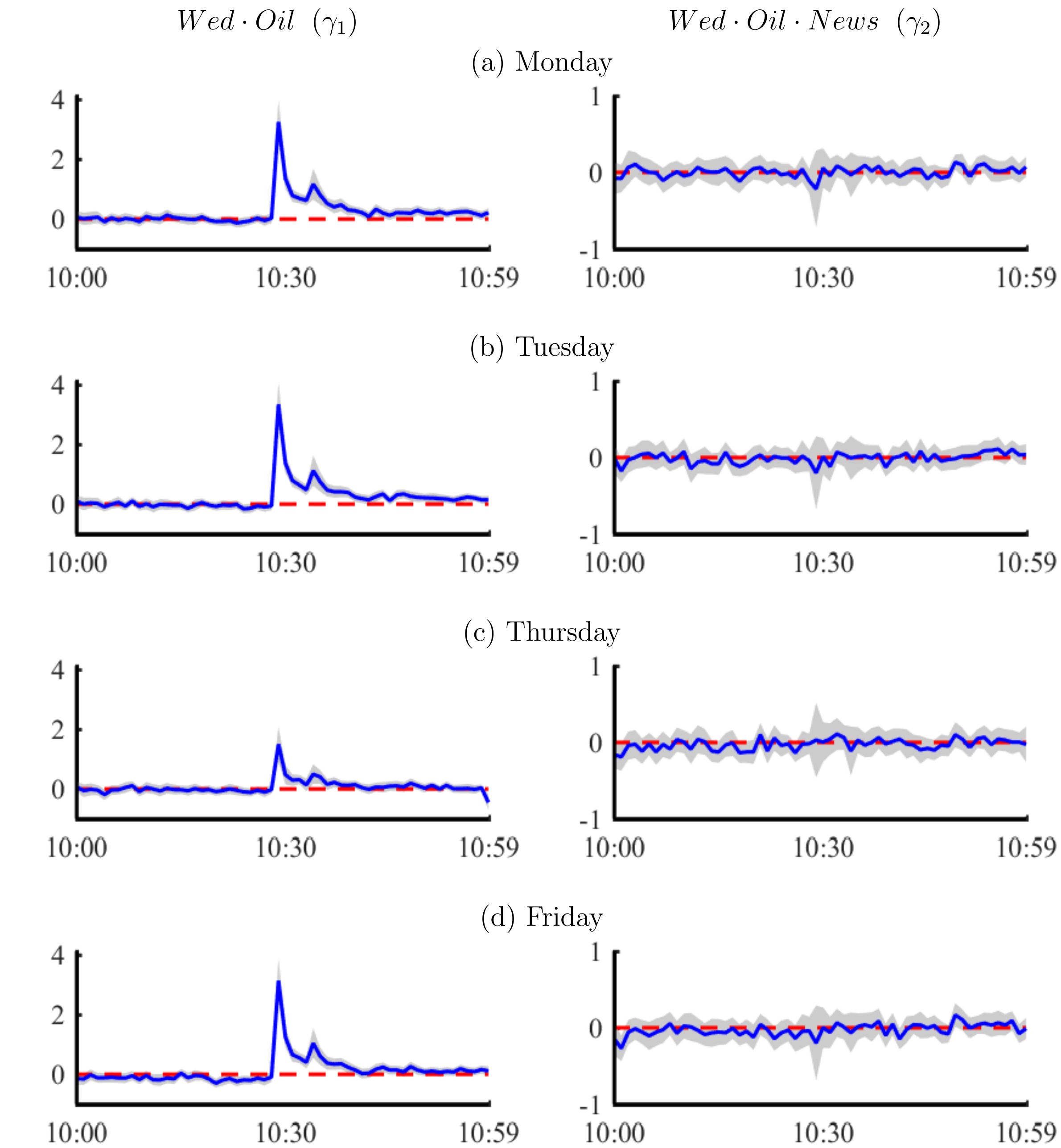


Figure S.5: Returns at 10:31 a.m. and Inventory Changes. This figure plots the return between 10:31 a.m. and 10:30 a.m, against the change on inventories. The red line depicts the fitted value of a linear regression between these two variables.



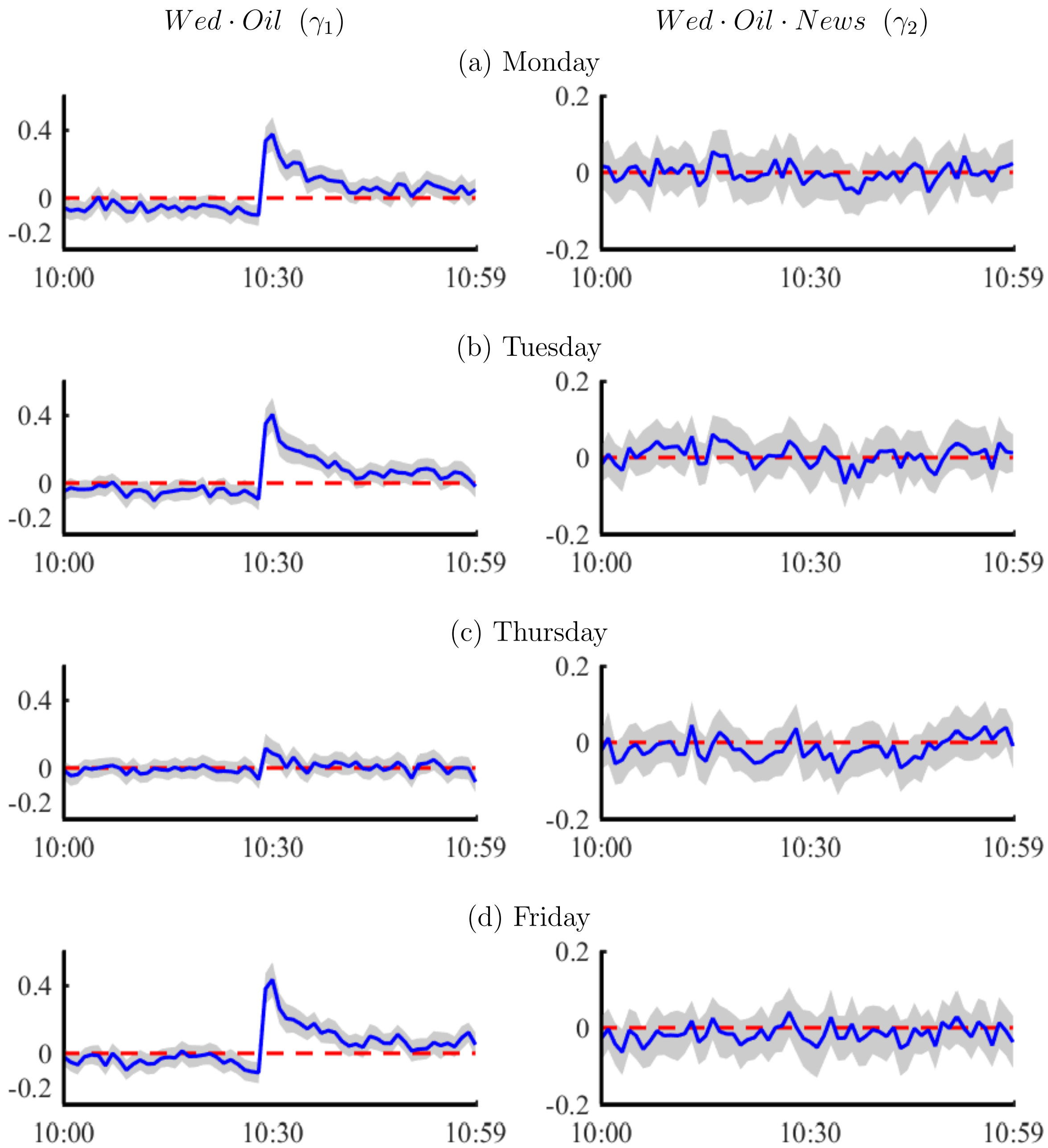
	Monday		**Tuesday**		**Thursday**		**Friday**	
10:30	γ_1	γ_2	γ_1	γ_2	γ_1	γ_2	γ_1	γ_2
Estimate	0.31	-5.92‡	0.55	-5.69‡	1.73	-4.59‡	0.33	-5.37‡
Std. Error	0.71	0.96	0.79	1.04	0.98	1.20	0.82	1.06

Figure S.6: Different weekday as a control (Returns). This figure plots the estimates (blue line) and their 95 % confidence interval (grey area) of the model described in equation (3) using midpoint returns as a dependent variable. I restrict the sample to Wednesdays and another weekday indicated above each pair of plots. The left-hand (right-hand) side plots correspond to γ_1 (γ_2). The table at the bottom summarizes the estimates and standard errors at 10:30. ‡ indicates that the estimates are different from zero at the 5% confidence level.



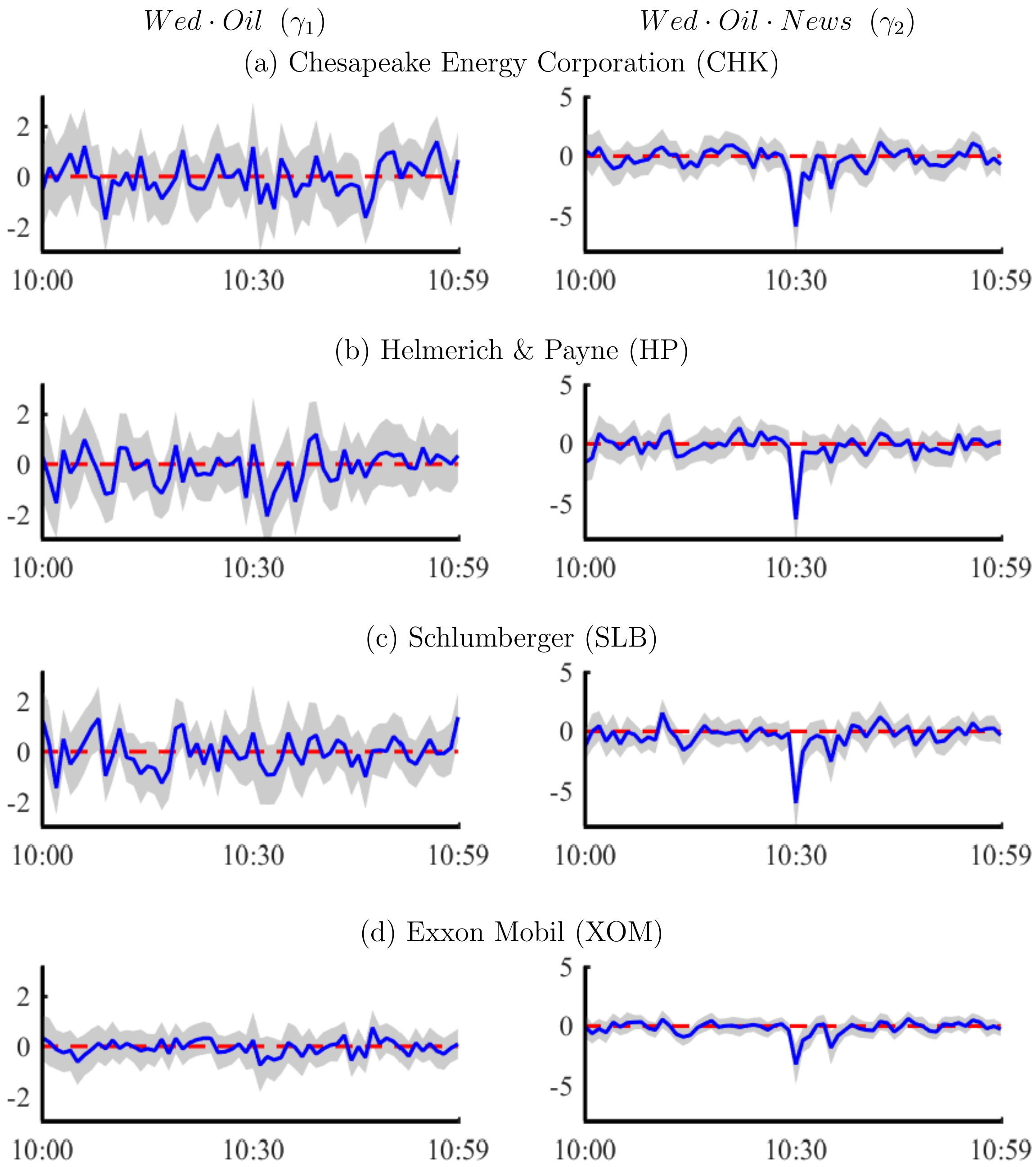
	Monday		Tuesday		Thursday		Friday	
10:30	γ_1	γ_2	γ_1	γ_2	γ_1	γ_2	γ_1	γ_2
Estimate	1.34‡	0.06	1.35‡	0.01	0.47‡	0.00	1.23‡	0.00
Std. Error	0.17	0.13	0.16	0.12	0.16	0.13	0.17	0.13

Figure S.7: Different weekday as a control (Spread). This figure plots the estimates (blue line) and their 95 % confidence interval (grey area) of the model described in equation (3), using the effective bid-ask spread as a dependent variable. I restrict the sample to Wednesdays and another weekday indicated above each pair of plots. The left-hand (right-hand) side plots correspond to γ_1 (γ_2). The table at the bottom summarizes the estimates and standard errors at 10:30. ‡ indicates that the estimates are different from zero at the 5% confidence level.



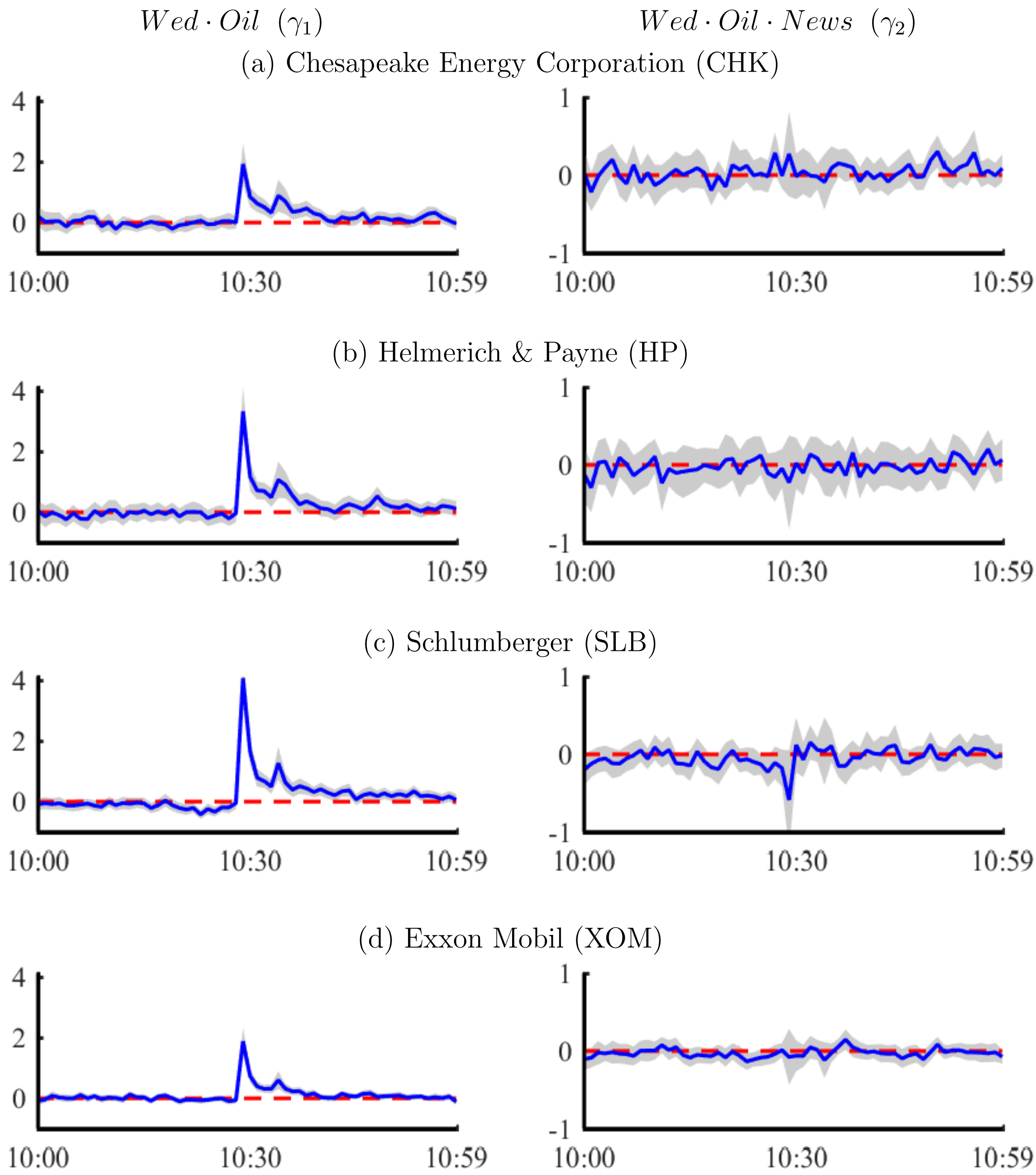
10:30	Monday γ_1	Monday γ_2	Tuesday γ_1	Tuesday γ_2	Thursday γ_1	Thursday γ_2	Friday γ_1	Friday γ_2
Estimate	$0.37^{\ddagger}$	-0.01	$0.40^{\ddagger}$	-0.03	$0.09^{\ddagger}$	-0.02	$0.43^{\ddagger}$	-0.04
Std. Error	0.05	0.04	0.05	0.03	0.04	0.04	0.05	0.04

Figure S.8: Different weekday as a control (Volume). This figure plots the estimates (blue line) and their 95 % confidence interval (grey area) of the model described in equation (3), using the number of transactions (in logs) as a dependent variable. I restrict the sample to Wednesdays and another weekday indicated above each pair of plots. The left-hand (right-hand) side plots correspond to γ_1 (γ_2). The table at the bottom summarizes the estimates and standard errors at 10:30. ‡ indicates that the estimates are different from zero at the 5% confidence level.



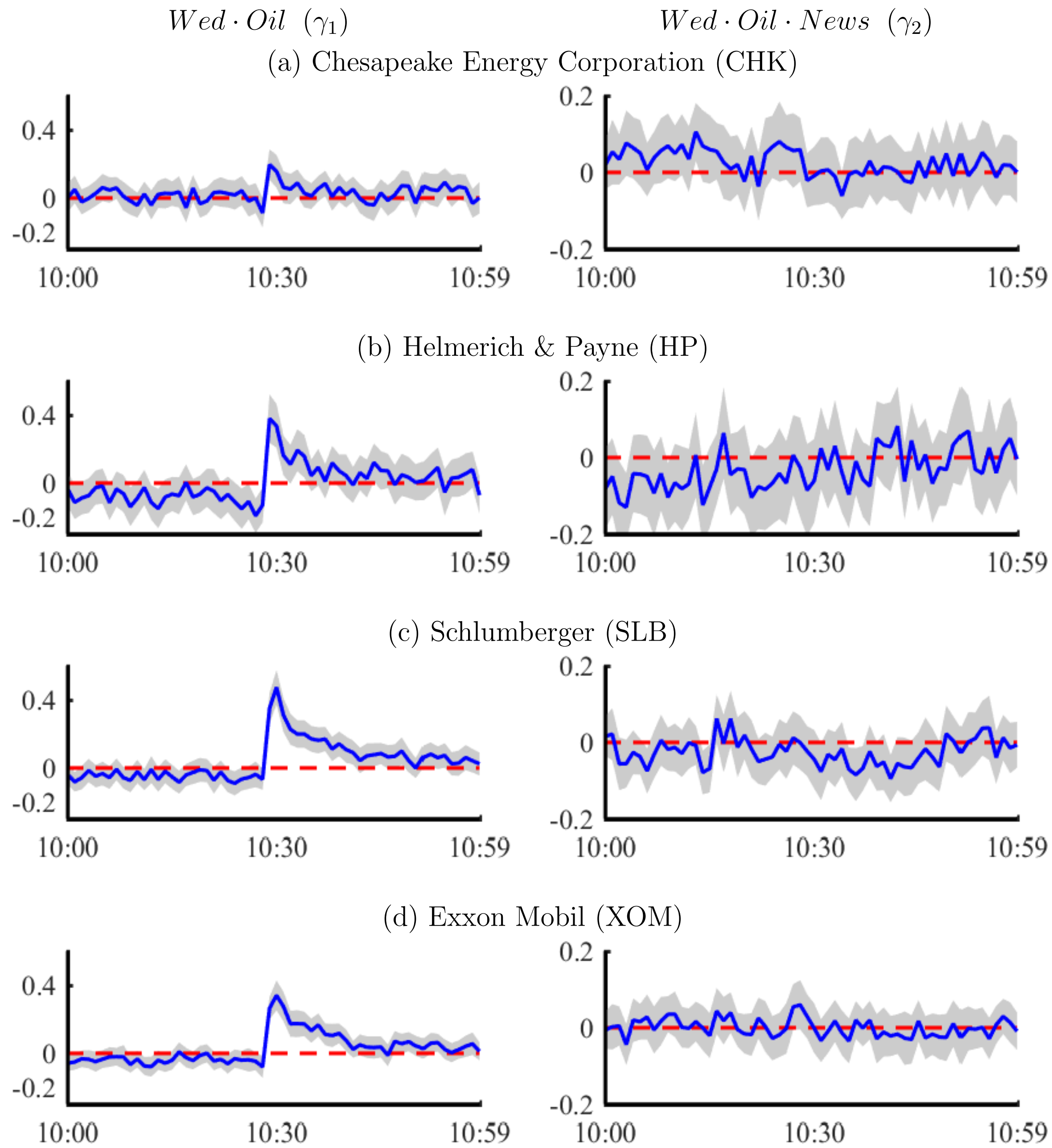
	CHK		HP		SLB		XOM	
10:30	γ_1	γ_2	γ_1	γ_2	γ_1	γ_2	γ_1	γ_2
Estimate	1.18	-5.91‡	0.80	-6.36‡	0.76	-6.04‡	0.24	-3.23‡
Std. Error	0.92	1.10	0.97	1.10	0.97	1.19	0.58	0.87

Figure S.9: Firm by firm results (Returns). This figure plots the estimates (blue line) and their 95 % confidence interval (grey area) of the model described in equation (3), using midpoint returns as a dependent variable. I restrict the sample to one unique oil firm indicated above each pair of plots. The left-hand (right-hand) side plots correspond to γ_1 (γ_2). The table at the bottom summarizes the estimates and standard errors at 10:30. ‡ indicates that the estimates are different from zero at the 5% confidence level.



	CHK		HP		SLB		XOM	
10:30	γ_1	γ_2	γ_1	γ_2	γ_1	γ_2	γ_1	γ_2
Estimate	$0.84^{\ddagger}$	-0.02	$1.16^{\ddagger}$	0.02	$1.63^{\ddagger}$	0.12	$0.73^{\ddagger}$	-0.06
Std. Error	0.17	0.15	0.24	0.17	0.22	0.18	0.11	0.10

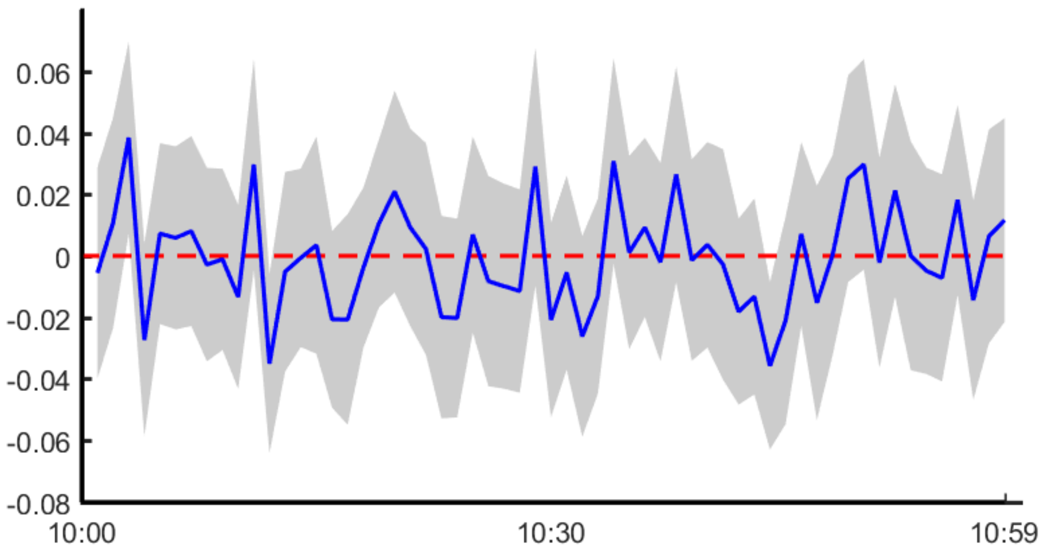
Figure S.10: Firm by firm results (Spreads). This figure plots the estimates (blue line) and their 95 % confidence interval (grey area) of the model described in equation (3), using the effective bid-ask spreads as a dependent variable. I restrict the sample to one unique oil firm indicated above each pair of plots. The left-hand (right-hand) side plots correspond to γ_1 (γ_2). The table at the bottom summarizes the estimates and standard errors at 10:30. ‡ indicates that the estimates are different from zero at the 5% confidence level.



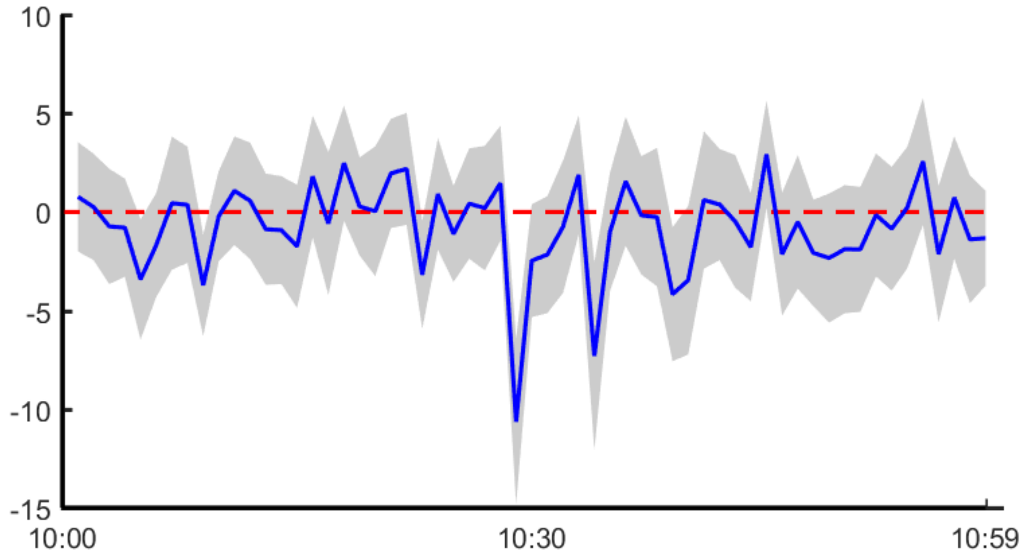
10:30	CHK γ_1	CHK γ_2	HP γ_1	HP γ_2	SLB γ_1	SLB γ_2	XOM γ_1	XOM γ_2
Estimate	$0.16^{\ddagger}$	-0.01	$0.34^{\ddagger}$	-0.06	$0.47^{\ddagger}$	-0.04	$0.34^{\ddagger}$	-0.00
Std. Error	0.05	0.04	0.07	0.06	0.05	0.04	0.04	0.03

Figure S.11: Firm by firm results (Volume). This figure plots the estimates (blue line) and their 95 % confidence interval (grey area) of the model described in equation (3), using the number of transactions (in logs) as a dependent variable. I restrict the sample to one unique oil firm indicated above each pair of plots. The left-hand (right-hand) side plots correspond to γ_1 (γ_2). The table at the bottom summarizes the estimates and standard errors at 10:30. ‡ indicates that the estimates are different from zero at the 5% confidence level.

(a) $Wed \cdot Oil$ (γ_1)



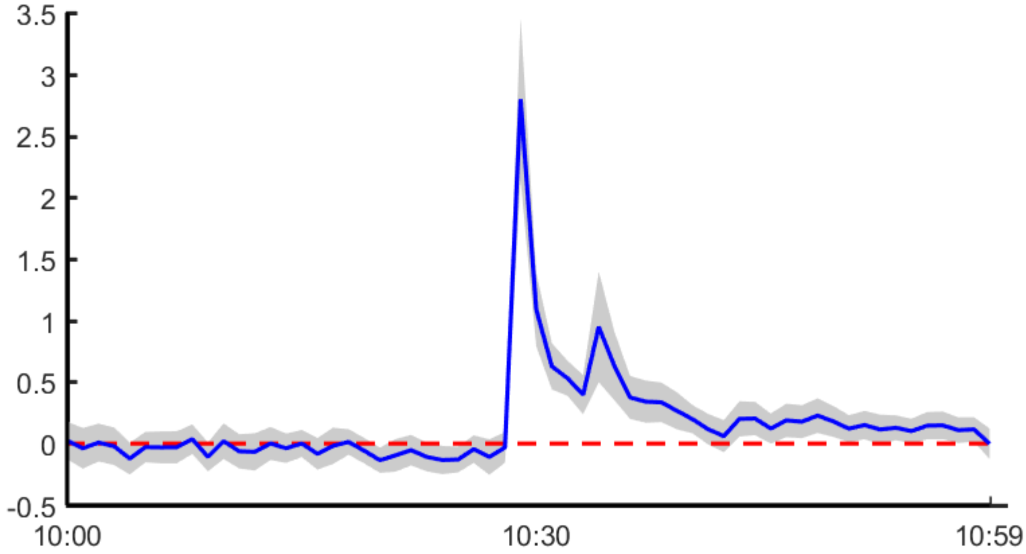
(b) $Wed \cdot Oil \cdot \Delta log(Inv)$ (γ_2)



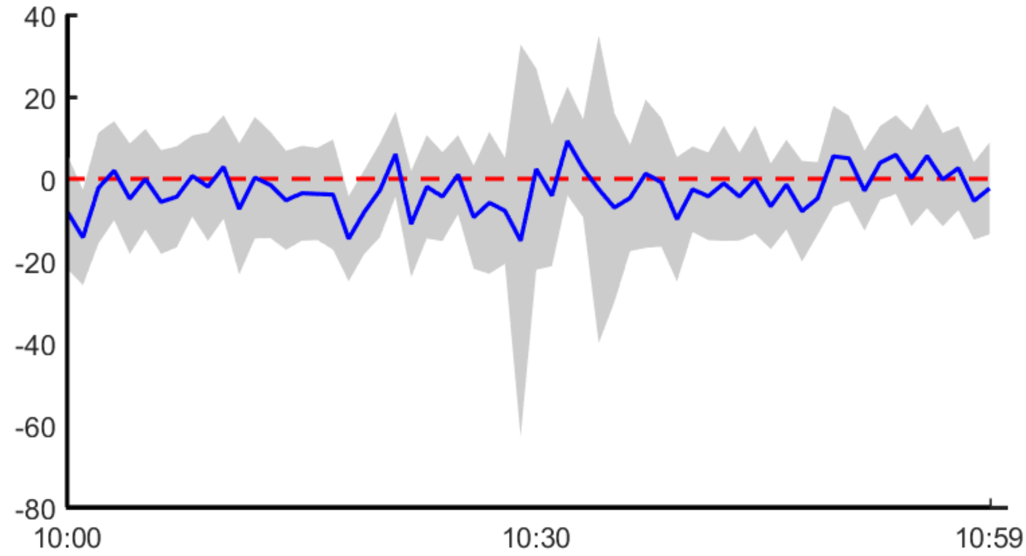
	10:00-10:28		**10:29**		**10:30**		**10:31-10:59**	
	γ_1	γ_2	γ_1	γ_2	γ_1	γ_2	γ_1	γ_2
Mean	-0.00	-0.14	0.03	-10.64‡	-0.02	-2.47	0.00	-0.95
Rejections	0.07	0.11	0.00	1.00	0.00	0.00	0.03	0.10

Figure S.12: Raw inventory changes (Returns). This figure plots the estimates (blue line) and their 95 % confidence interval (grey area) of the model described in equation (3) using midpoint returns as a dependent variable and the raw change in inventories instead of $News$. The table at the bottom summarizes the mean estimates and the proportion of minutes in which we can reject that the parameter equals zero at the 5% confidence level. ‡ indicates that the null of all the estimates being equal to zero is rejected at the 5% confidence level under the assumption of independence of coefficients across minutes.

(a) $Wed \cdot Oil$ (γ_1)



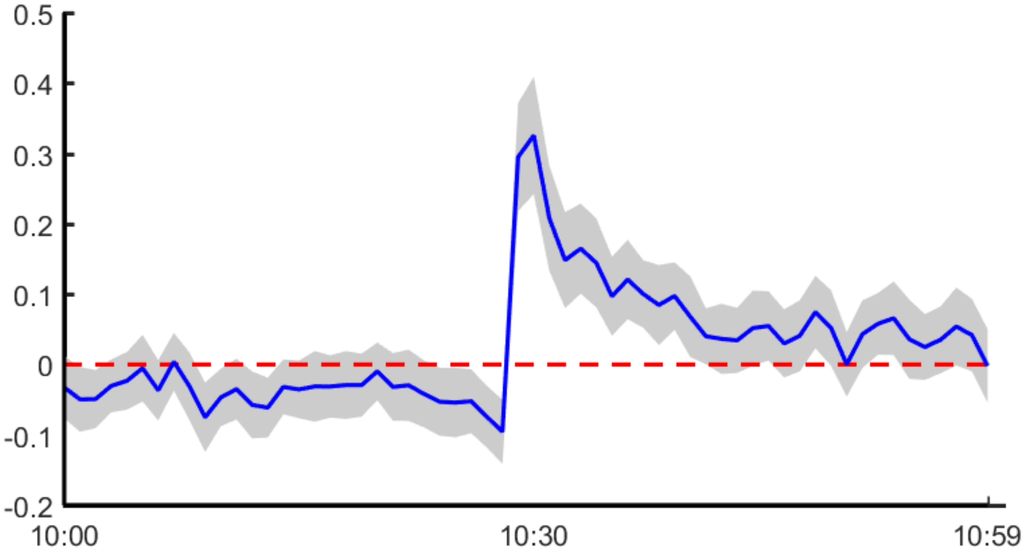
(b) $Wed \cdot Oil \cdot \Delta log(Inv)$ (γ_2)



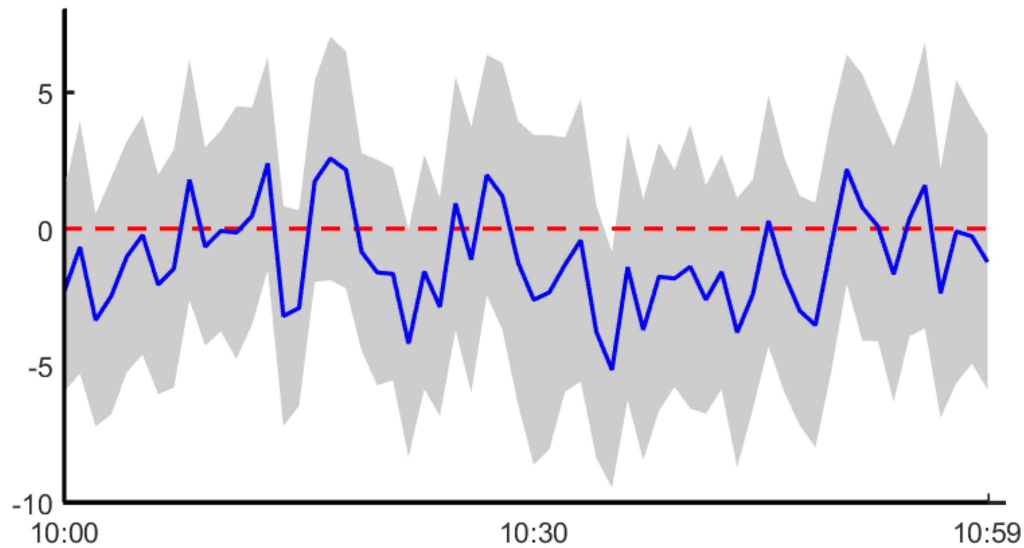
	10:00-10:28		**10:29**		**10:30**		**10:31-10:59**	
	γ_1	γ_2	γ_1	γ_2	γ_1	γ_2	γ_1	γ_2
Mean	-0.05	-4.10	$2.80^{\ddagger}$	-15.06	$1.09^{\ddagger}$	2.39	$0.25^{\ddagger}$	-1.06
Rejections	0.10	0.07	1.00	0.00	1.00	0.00	0.86	0.00

Figure S.13: Raw inventory changes (Spreads). This figure plots the estimates (blue line) and their 95 % confidence interval (grey area) of the model described in equation (3) using the proportional effective bid-ask spreads as a dependent variable and the raw change in inventories instead of $News$. The table at the bottom summarizes the mean estimates and the proportion of minutes in which we can reject that the parameter equals zero at the 5% confidence level. ‡ indicates that the null of all the estimates being equal to zero is rejected at the 5% confidence level under the assumption of independence of coefficients across minutes.

(a) $Wed \cdot Oil\ \ (\gamma_1)$

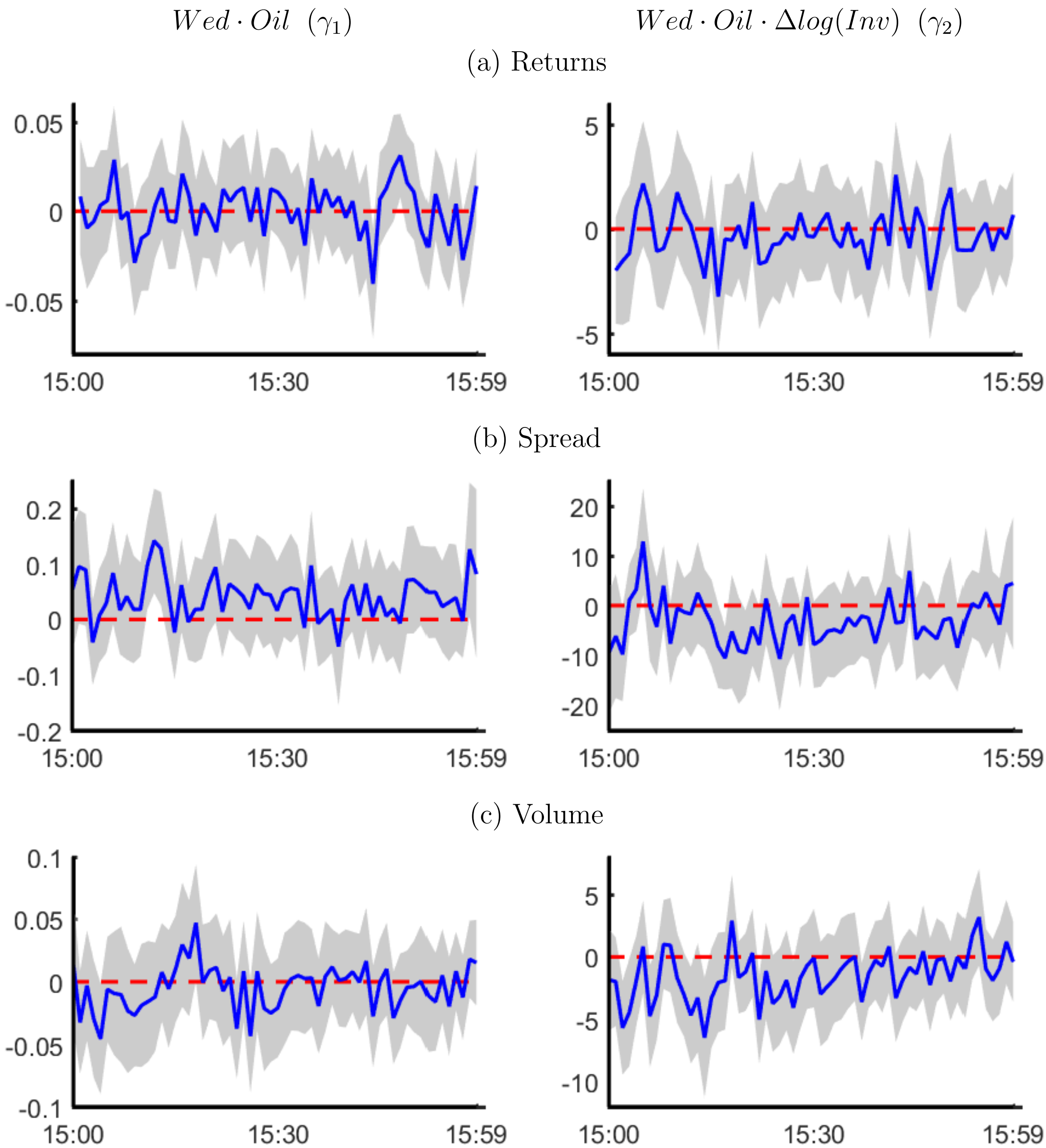


(b) $Wed \cdot Oil \cdot \Delta log(Inv)\ \ (\gamma_2)$



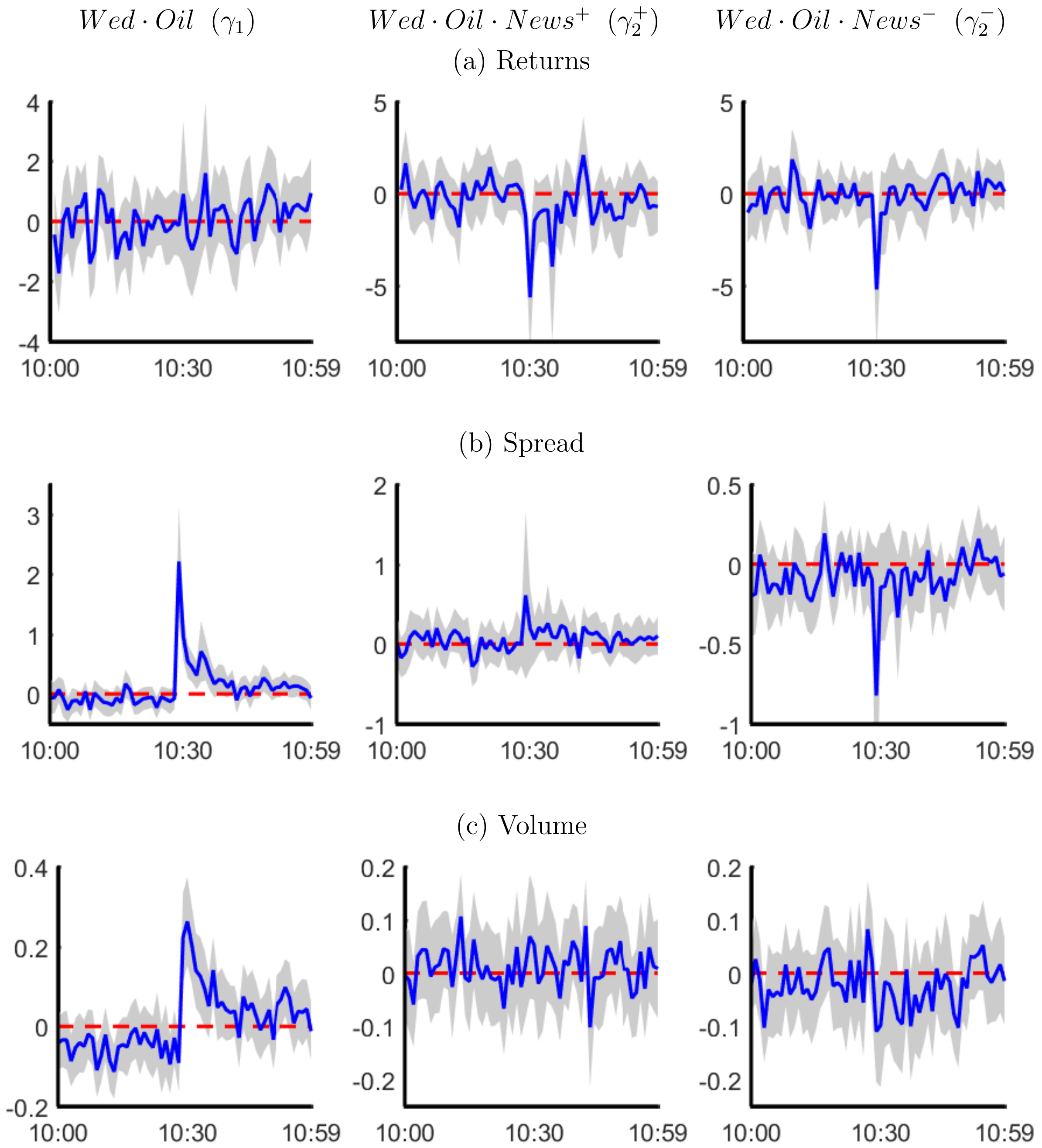
	10:00-10:28		**10:29**		**10:30**		**10:31-10:59**	
	γ_1	γ_2	γ_1	γ_2	γ_1	γ_2	γ_1	γ_2
Mean	-0.04‡	-0.66	0.29‡	-1.24	0.33‡	-2.60	0.07‡	-1.47
Rejections	0.38	0.03	1.00	0.00	1.00	0.00	0.52	0.03

Figure S.14: Raw inventory changes (Volume). This figure plots the estimates (blue line) and their 95 % confidence interval (grey area) of the model described in equation (3) using the number of transactions (in logs) as a dependent variable and the raw change in inventories instead of $News$. The table at the bottom summarizes the mean estimates and the proportion of minutes in which we can reject that the parameter equals zero at the 5% confidence level. ‡ indicates that the null of all the estimates being equal to zero is rejected at the 5% confidence level under the assumption of independence of coefficients across minutes.



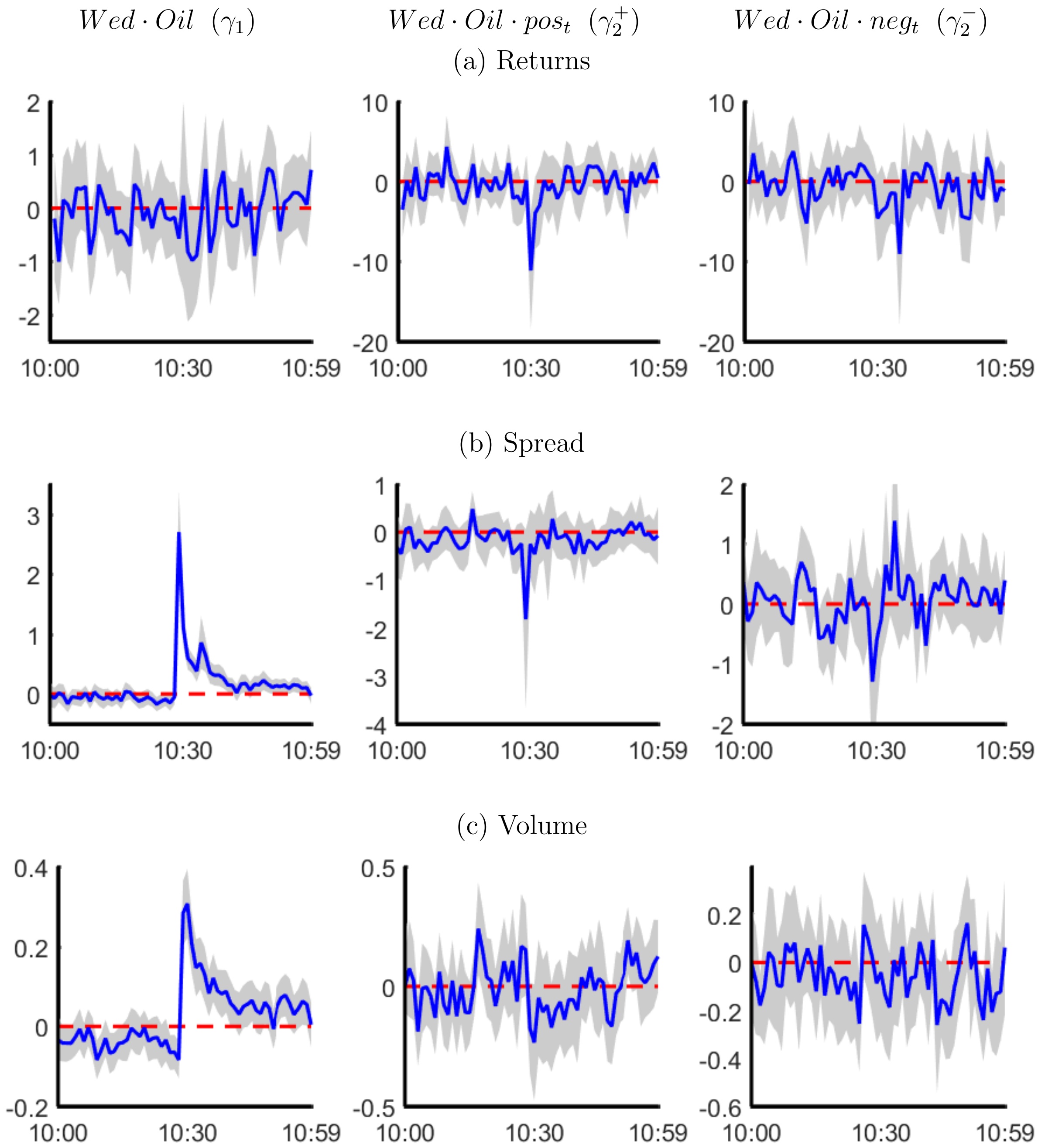
	Returns		**Spread**		**Volume**	
	γ_1	γ_2	γ_1	γ_2	γ_1	γ_2
Mean	-0.07	0.02	0.04	-0.02	-0.01	-0.01‡
Rejections	0.10	0.03	0.07	0.03	0.07	0.15

Figure S.15: Raw inventory changes (Afternoon Sample). This figure plots the estimates (blue line) and their 95 % confidence interval (grey area) of the model described in equation (3). Each row considers a different dependent variable. The table at the bottom summarizes the mean estimates and the proportion of minutes in which we can reject that the parameter equals zero at the 5% confidence level. ‡ indicates that the null of all the estimates being equal to zero is rejected at the 5% confidence level under the assumption of independence of coefficients across minutes.



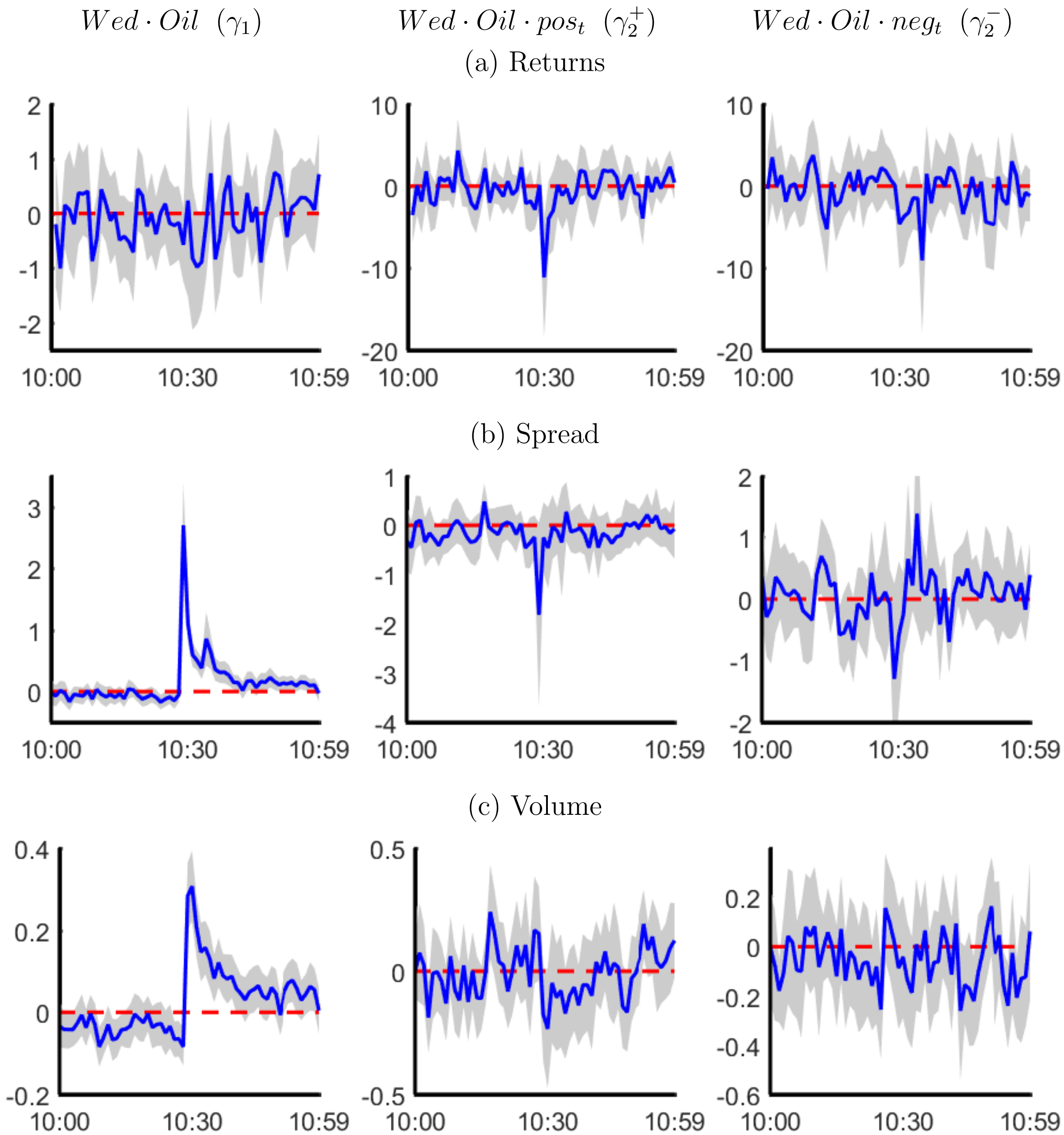
10:30	**Returns** γ_1	γ_2^+	γ_2^-	**Spread** γ_1	γ_2^+	γ_2^-	**Volume** γ_1	γ_2^+	γ_2^-
Estimate	0.91	-5.61‡	-5.18‡	0.96‡	0.20	-0.14	0.26‡	0.05	-0.10
S. E.	1.23	1.56	1.63	0.20	0.26	0.17	0.06	0.05	0.06

Figure S.16: Asymmetric Reaction. This figure plots the estimates (blue line) and their 95 % confidence interval (grey area) of the model described in equation (S.1) Each row considers a different dependent variable. The right-hand side plots correspond to γ_2^-, and the middle ones to γ_2^+; meanwhile, the left-hand side ones refers to γ_1. The table at the bottom summarizes the estimates and standard errors at 10:30. ‡ indicates that the estimates are different from zero at the 5% significance level.



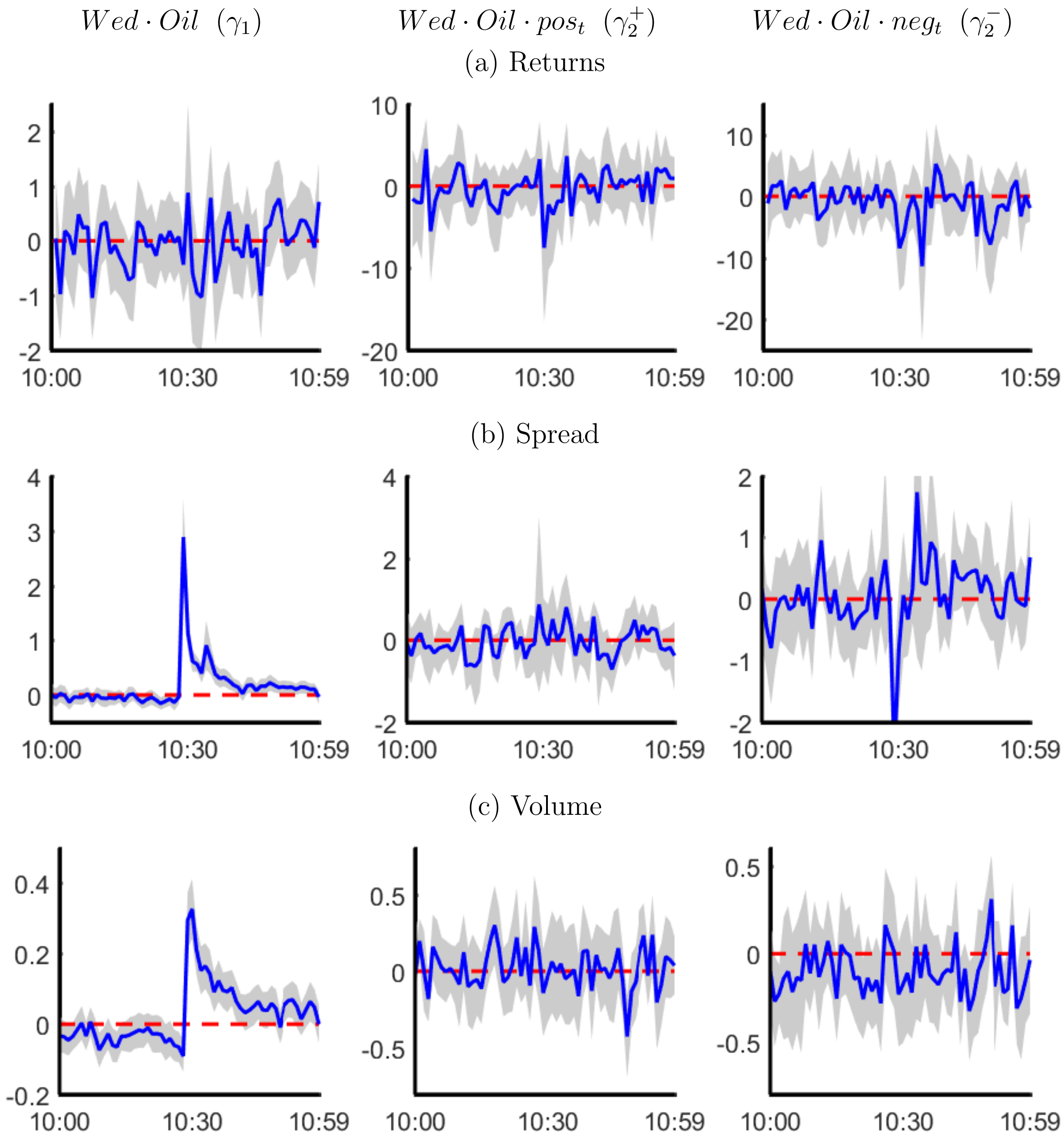
	Returns			Spread			Volume		
10:30	γ_1	γ_2^+	γ_2^-	γ_1	γ_2^+	γ_2^-	γ_1	γ_2^+	γ_2^-
Estimate	0.23	-11.12‡	-4.60	1.10‡	-0.25	-0.58	0.31‡	-0.23	-0.04
S. E.	0.90	3.73	2.77	0.16	0.36	0.61	0.04	0.12	0.13

Figure S.17: Binary asymmetric Reaction. This figure plots the estimates (blue line) and their 95 % confidence interval (grey area) of the model described in equation (S.1). Each row considers a different dependent variable. The right-hand side plots correspond to γ_2^-, and the middle ones to γ_2^+; meanwhile, the left-hand side ones refers to γ_1. $pos_t = \mathbf{1}\{News > 1.65\}$ and $neg_t = \mathbf{1}\{News < 1.65\}$. The table at the bottom summarizes the estimates and standard errors at 10:30. ‡ indicates that the estimates are different from zero at the 5% significance level.



10:30	Returns γ_1	Returns γ_2^+	Returns γ_2^-	Spread γ_1	Spread γ_2^+	Spread γ_2^-	Volume γ_1	Volume γ_2^+	Volume γ_2^-
Estimate	0.23	-11.12‡	-4.60	1.10‡	-0.25	-0.58	0.31‡	-0.23	-0.04
S. E.	0.90	3.73	2.77	0.16	0.36	0.61	0.04	0.12	0.13

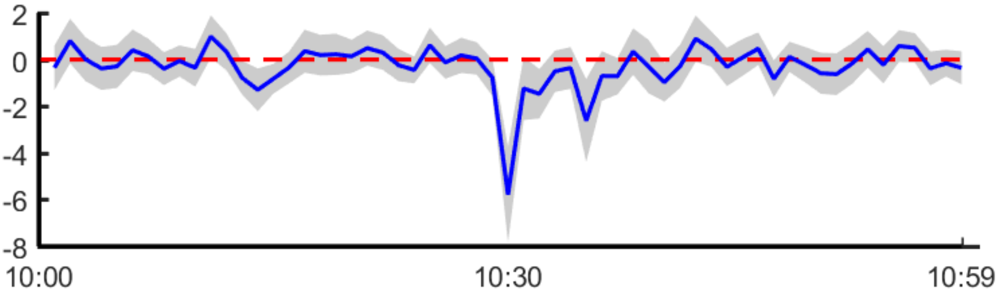
Figure S.18: Binary Specification. This figure plots the estimates (blue line) and their 95 % confidence interval (grey area) of the model described in equation (S.2) but using 1.75 as a threshold instead of 1.65. Each row considers a different dependent variable. The right-hand side plots correspond to γ_2^-, and the middle ones to γ_2^+; meanwhile, the left-hand side ones refers to γ_1. $pos_t = \mathbf{1}\{News > 1.75\}$ and $neg_t = \mathbf{1}\{News < 1.75\}$. The table at the bottom summarizes the estimates and standard errors at 10:30. ‡ indicates that the estimates are different from zero at the 5% confidence level.



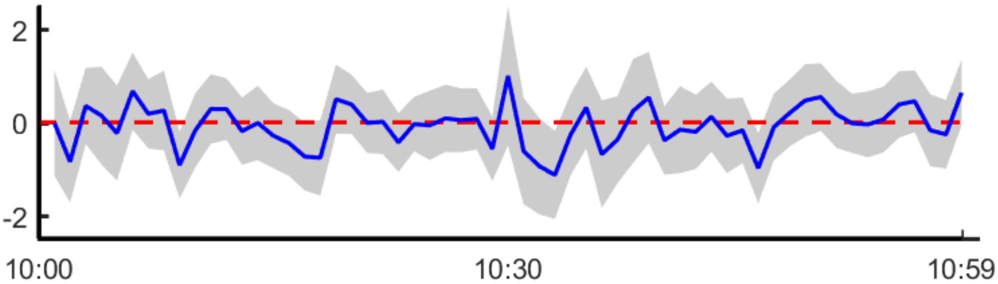
	Returns			Spread			Volume		
10:30	γ_1	γ_2^+	γ_2^-	γ_1	γ_2^+	γ_2^-	γ_1	γ_2^+	γ_2^-
Estimate	0.88	-7.52	-8.40‡	1.12‡	0.15	-0.81	0.33‡	-0.03	-0.18
S. E.	0.83	4.63	3.55	0.16	0.44	0.50	0.04	0.15	0.17

Figure S.19: Binary Specification. This figure plots the estimates (blue line) and their 95 % confidence interval (grey area) of the model described in equation (S.2) but using 2 as a threshold instead of 1.65. Each row considers a different dependent variable. The right-hand side plots correspond to γ_2^-, and the middle ones to γ_2^+; meanwhile, the left-hand side ones refers to γ_1. $pos_t = \mathbf{1}\{News > 2\}$ and $neg_t = \mathbf{1}\{News < 2\}$. The table at the bottom summarizes the estimates and standard errors at 10:30. ‡ indicates that the estimates are different from zero at the 5% confidence level.

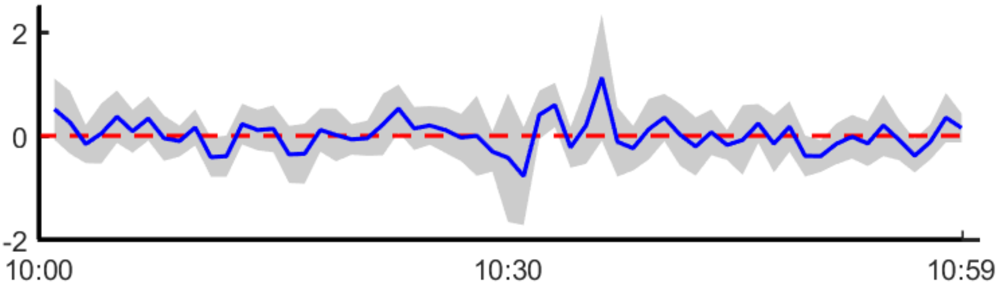
(a) $Wed \cdot Oil\ \ (\gamma_1)$



(a) $Wed \cdot Oil \cdot News\ \ (\gamma_2)$



(a) $Wed \cdot Oil \cdot Disag\ \ (\kappa_1)$



(a) $Wed \cdot Oil \cdot News \cdot Disag\ \ (\kappa_2)$

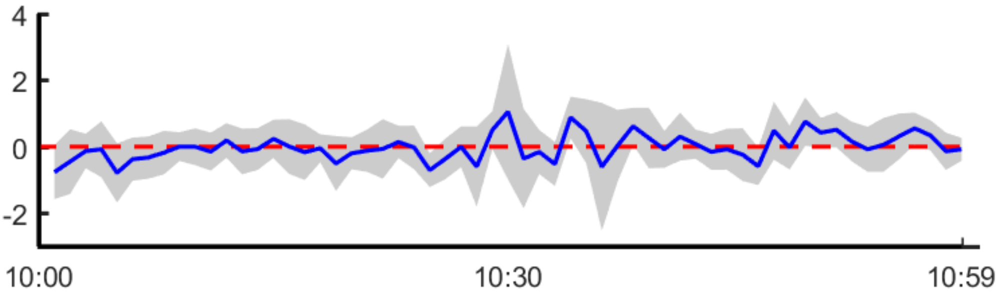
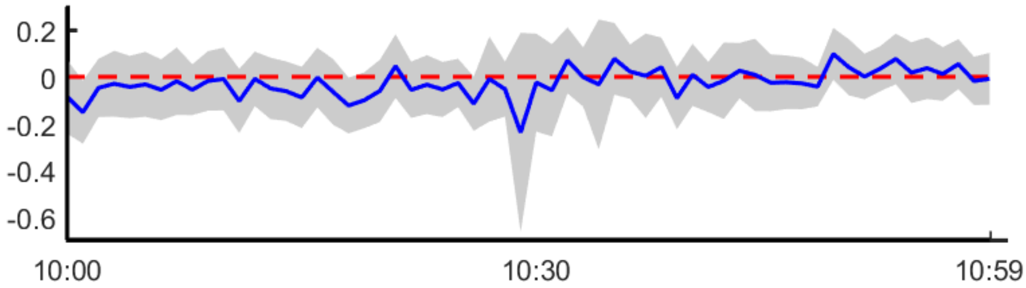
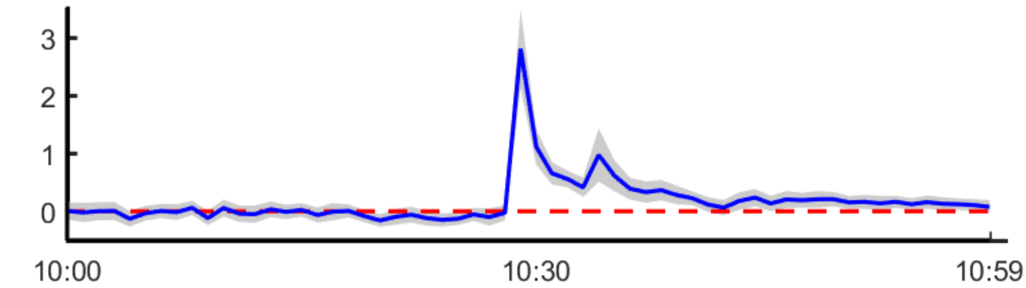


Figure S.20: Disagreement (Returns). This figure plots the estimates (blue line) and their 95 % confidence interval (grey area) of the model described in equation (S.3), using midpoint returns as a dependent variable.

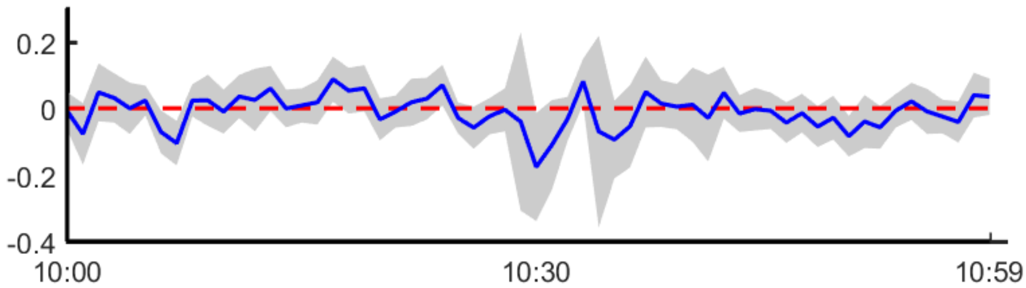
(a) $Wed \cdot Oil$ (γ_1)



(a) $Wed \cdot Oil \cdot News$ (γ_2)



(a) $Wed \cdot Oil \cdot Disag$ (κ_1)



(a) $Wed \cdot Oil \cdot News \cdot Disag$ (κ_2)

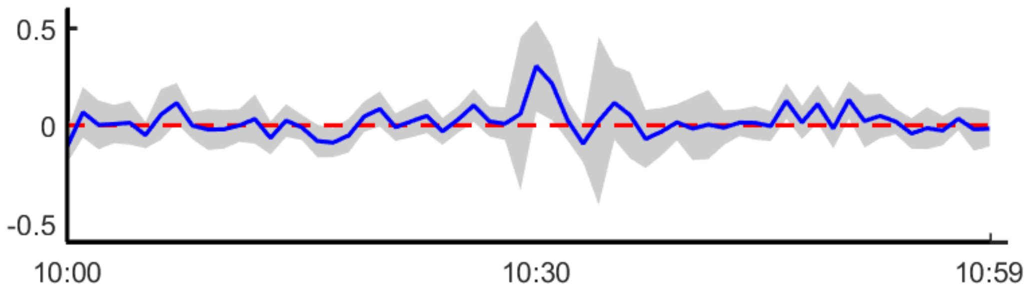
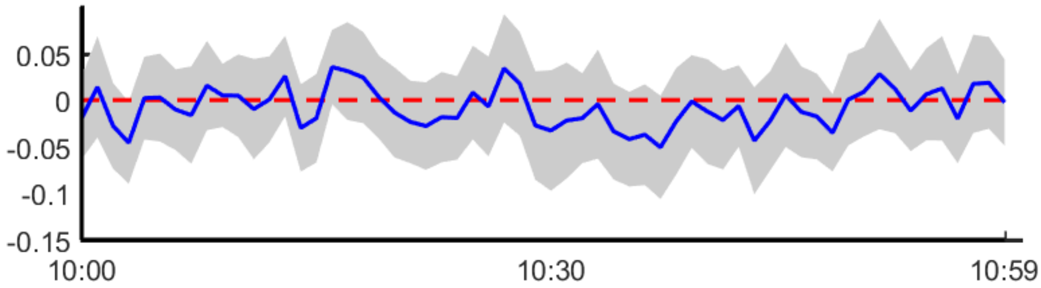
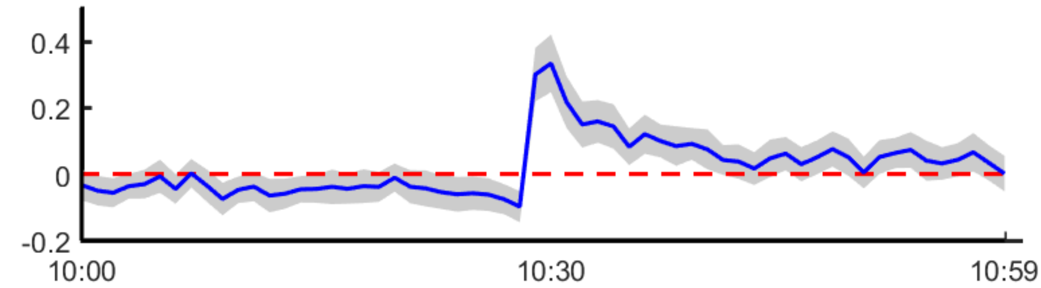


Figure S.21: Disagreement (Spreads). This figure plots the estimates (blue line) and their 95 % confidence interval (grey area) of the model described in equation (S.3), using proportional effective bid-ask spreads as a dependent variable.

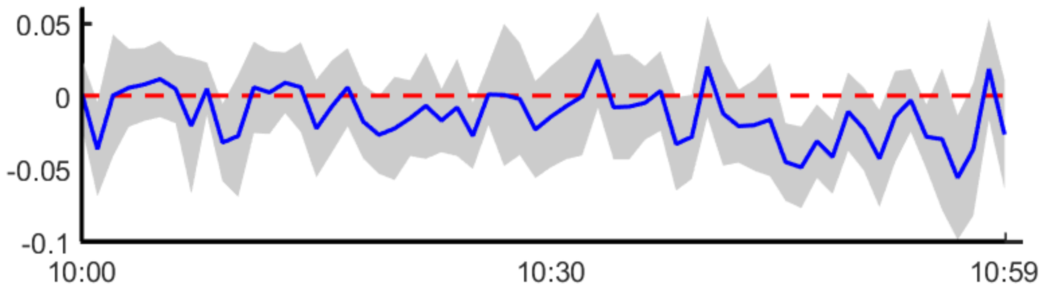
(a) $Wed \cdot Oil\ \ (\gamma_1)$



(a) $Wed \cdot Oil \cdot News\ \ (\gamma_2)$



(a) $Wed \cdot Oil \cdot Disag\ \ (\kappa_1)$



(a) $Wed \cdot Oil \cdot News \cdot Disag\ \ (\kappa_2)$

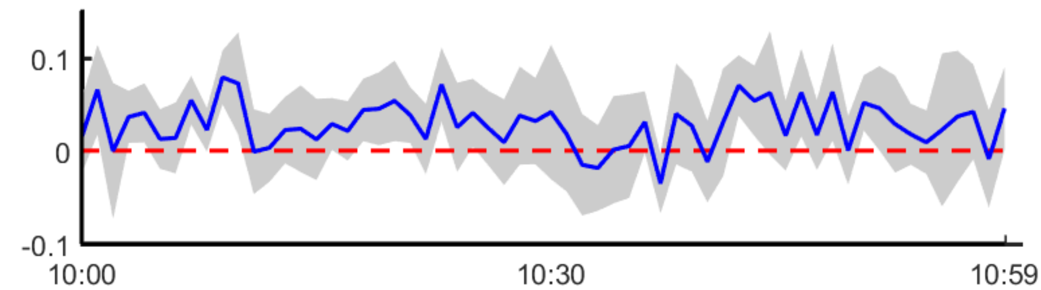
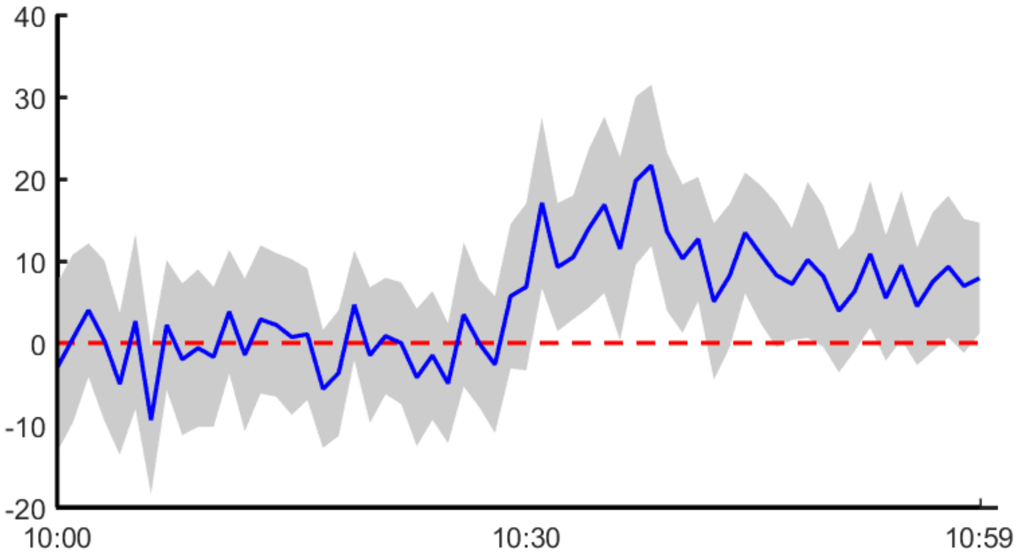
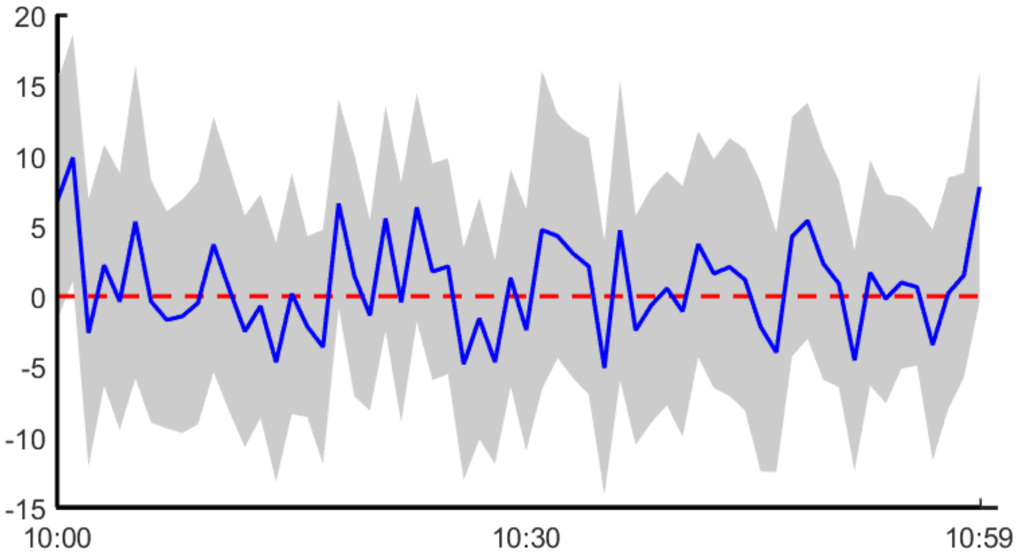


Figure S.22: Disagreement (Volume). This figure plots the estimates (blue line) and their 95 % confidence interval (grey area) of the model described in equation (S.3), using number of transactions (in logs) as a dependent variable.

(a) $Wed \cdot Oil$ (γ_1)



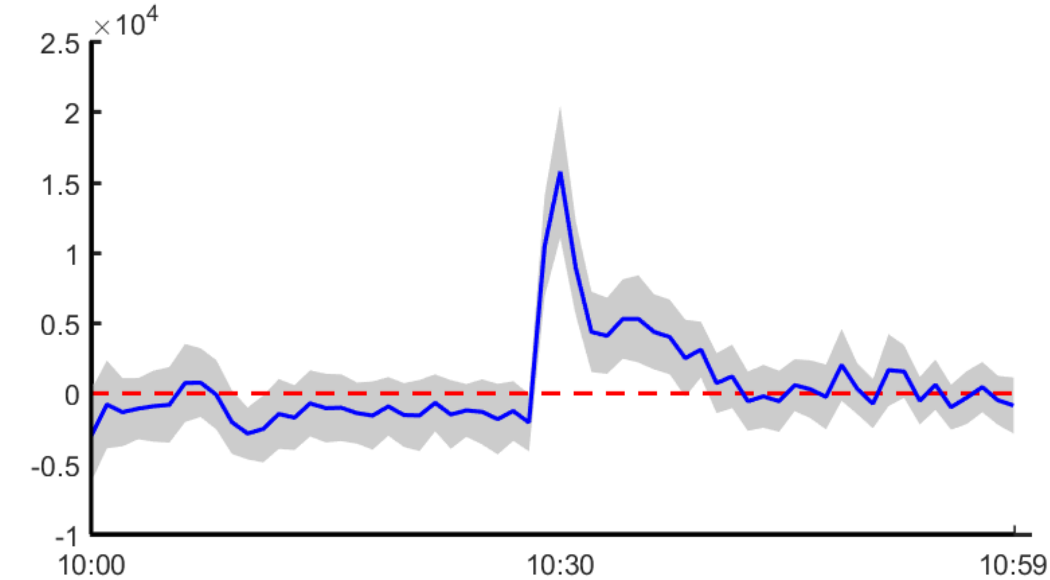
(b) $Wed \cdot Oil \cdot News$ (γ_2)



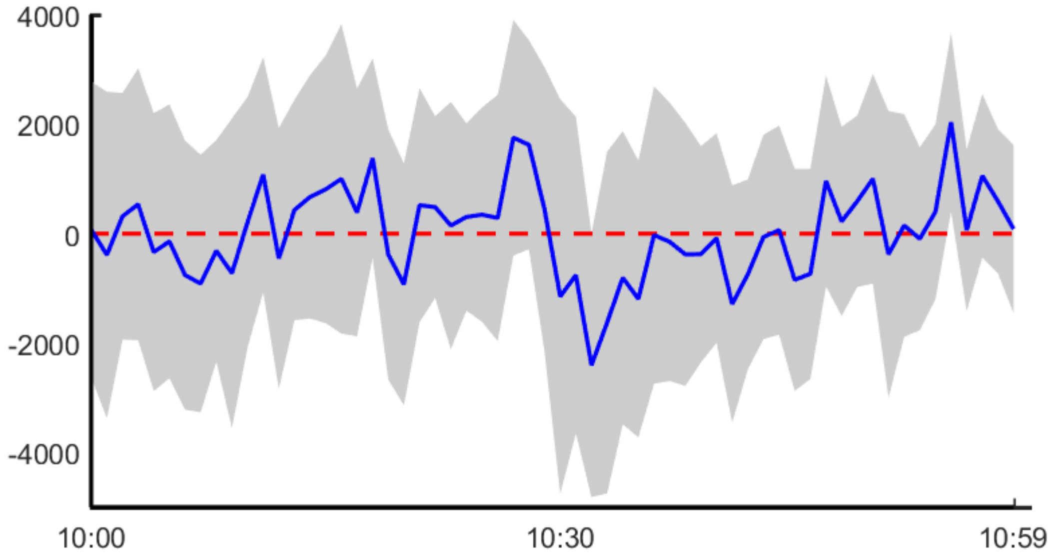
	10:00-10:28		**10:29**		**10:30**		**10:31-10:59**	
	γ_1	γ_2	γ_1	γ_2	γ_1	γ_2	γ_1	γ_2
Mean	-0.61	0.64	5.71	1.30	6.84	-2.41	$10.36^{\ddagger}$	1.03
Rejections	0.03	0.03	0.00	0.00	0.00	0.00	0.66	0.00

Figure S.23: Estimates Quoted Bid-Ask Spread (including minutes without trading). This figure plots the estimates (blue line) and their 95 % confidence interval (grey area) of the model described in equation (3) using the proportional quoted bid-ask spread as a dependent variable. The table at the bottom summarizes the mean estimates and the proportion of minutes in which we can reject that the parameter equals zero at the 5% significance level. ‡ indicates that the null of all the estimates being equal to zero is rejected at the 5% significance level under the assumption of independence of coefficients across minutes.

(a) $Wed \cdot Oil$ (γ_1)

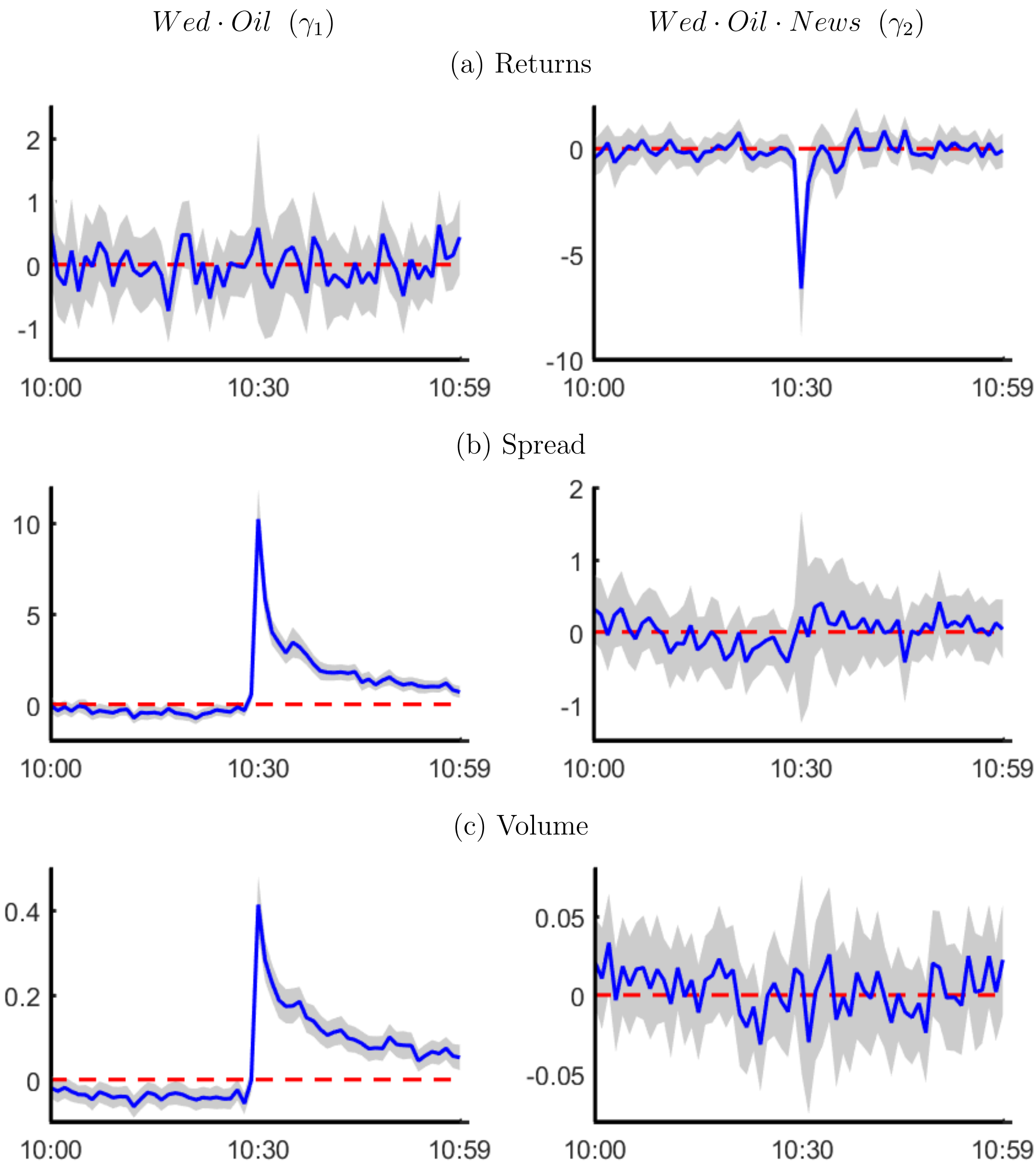


(b) $Wed \cdot Oil \cdot News$ (γ_2)



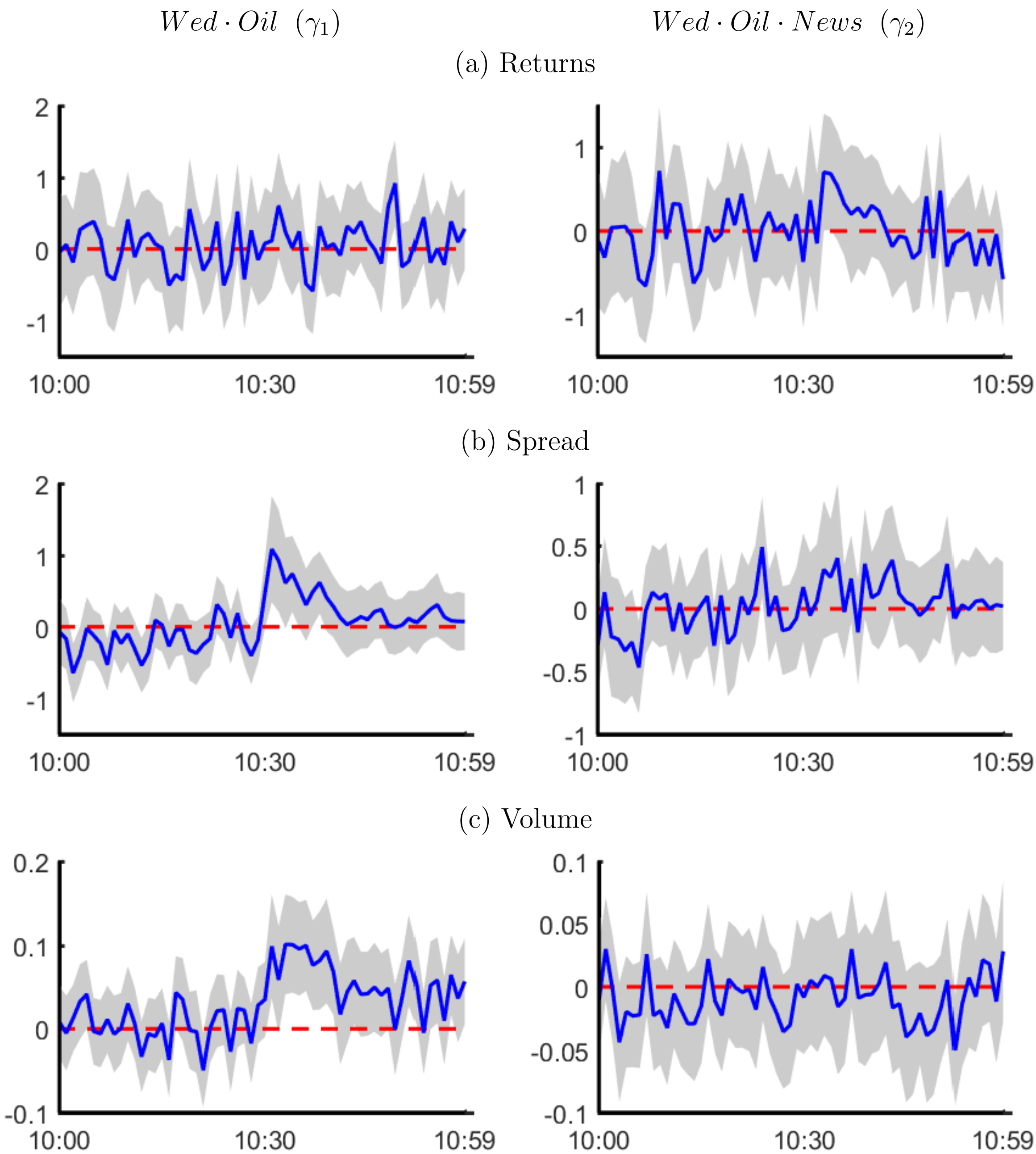
	10:00-10:28		**10:29**		**10:30**		**10:31-10:59**	
	γ_1	γ_2	γ_1	γ_2	γ_1	γ_2	γ_1	γ_2
Mean	-1270.90	241.97	10443.28‡	435.23	15739.75‡	-1149.02	1576.94‡	-163.02
Rejections	0.10	0.00	1.00	0.00	1.00	0.00	0.28	0.03

Figure S.24: Estimates Volume (including minutes without trading). This figure plots the estimates (blue line) and their 95 % confidence interval (grey area) of the model described in equation (3) using number of transactions as a dependent variable. The table at the bottom summarizes the mean estimates and the proportion of minutes in which we can reject that the parameter equals zero at the 5% significance level. ‡ indicates that the null of all the estimates being equal to zero is rejected at the 5% significance level under the assumption of independence of coefficients across minutes.



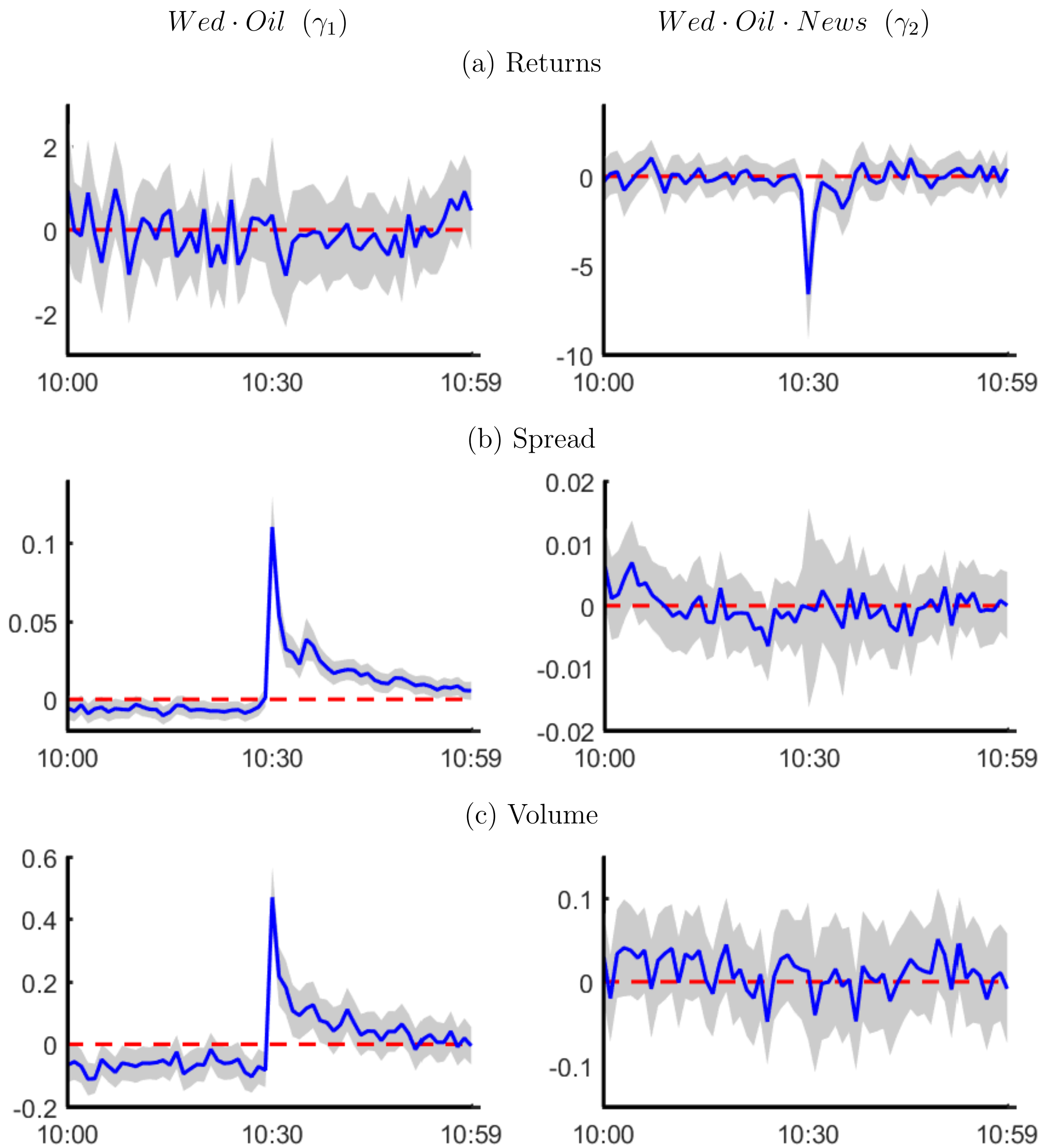
	Returns		**Spread**		**Volume**	
10:30	γ_1	γ_2	γ_1	γ_2	γ_1	γ_2
Estimate	0.58	-6.64‡	10.25‡	0.21	0.41‡	0.01
Std. Error	0.76	1.16	0.86	0.75	0.03	0.03

Figure S.25: Estimates Post-2005. This figure plots the estimates (blue line) and their 95 % confidence interval (grey area) of the model described in equation (3) with the alternative sample described in S.13 and using data from 2005. Each row considers a different dependent variable. The left-hand (right-hand) side plots correspond to γ_1 (γ_2). The table at the bottom summarizes the estimates and standard errors at 10:30. ‡ indicates that the estimates are different from zero at the 5% confidence level.



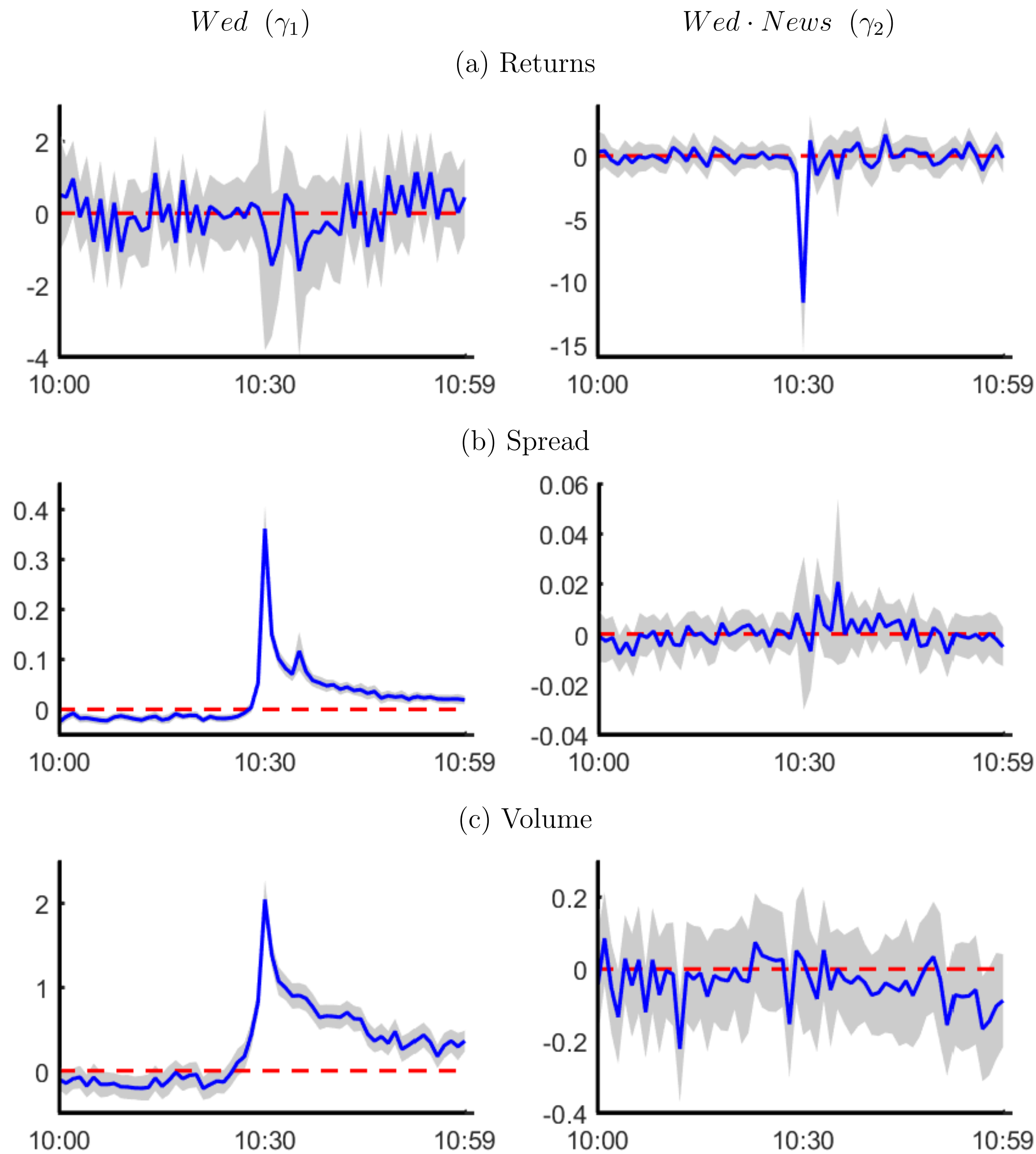
10:30	**Returns** γ_1	**Returns** γ_2	**Spread** γ_1	**Spread** γ_2	**Volume** γ_1	**Volume** γ_2
Estimate	0.08	-0.37	0.47	0.17	0.03	-0.01
Std. Error	0.40	0.40	0.25	0.22	0.02	0.02

Figure S.26: Estimates Pre-2005. This figure plots the estimates (blue line) and their 95 % confidence interval (grey area) of the model described in equation (3) with the alternative sample described in S.13 and using data up to 2004. Each row considers a different dependent variable. The left-hand (right-hand) side plots correspond to γ_1 (γ_2). The table at the bottom summarizes the estimates and standard errors at 10:30. ‡ indicates that the estimates are different from zero at the 5% confidence level.



	Returns		Spread		Volume	
10:30	γ_1	γ_2	γ_1	γ_2	γ_1	γ_2
Estimate	0.36	-6.61‡	0.11‡	-0.00	0.47‡	0.01
Std. Error	0.96	1.30	0.01	0.01	0.05	0.04

Figure S.27: Estimates Triple-diff. This figure plots the estimates (blue line) and their 95 % confidence interval (grey area) of the model described in equation (3) with the alternative sample described in S.13. Each row considers a different dependent variable. The left-hand (right-hand) side plots correspond to γ_1 (γ_2). The table at the bottom summarizes the estimates and standard errors at 10:30. ‡ indicates that the estimates are different from zero at the 5% confidence level.



	Returns		**Spread**		**Volume**	
10:30	γ_1	γ_2	γ_1	γ_2	γ_1	γ_2
Estimate	-0.46	$-11.69^{\ddagger}$	$0.36^{\ddagger}$	0.00	$2.04^{\ddagger}$	0.02
Std. Error	1.72	2.06	0.02	0.02	0.12	0.11

Figure S.28: Estimates Oil ETF. This figure plots the estimates (blue line) and their 95 % confidence interval (grey area) of the model described in equation (3) with the alternative sample described in S.13 and using data up to 2004. Each row considers a different dependent variable. The left-hand (right-hand) side plots correspond to γ_1 (γ_2). The table at the bottom summarizes the estimates and standard errors at 10:30. ‡ indicates that the estimates are different from zero at the 5% confidence level.

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