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The effect of the accidental disclosure of confidential short sales positions

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ABSTRACT

EU regulations mandate that short sellers disclose short positions as of 0.2% to authorities, which publicly disclose positions as of 0.5%. In January 2017, the Netherlands Authority for the Financial Markets accidentally disclosed confidential positions. Using the entire register, we show that small positions forecast future underperformance. We use the accidental disclosure as natural experiment to analyze the effect of publishing this information. Abnormal returns are positive after the disclosure. A possible explanation is that perceived short-selling risk on disclosed positions increased, which reduced the appetite for shorting. This is consistent with a post-event drop in abnormal short sales costs.

1. Introduction

In November 2012, the EU Regulation on Short Selling (SSR) was introduced in the European Union. SSR requires short sellers to report short positions larger than or equal to 0.2% of a company's issued share capital and every 0.1% above that. The authorities only publicly disclose short positions starting from 0.5%. With SSR in effect for around five years, the European Securities and Markets Authority (ESMA) evaluates, among others, the “transparency of net short positions and related reporting and disclosure requirements” (ESMA, 2017a, p. 6). ESMA (2017a), on the one hand, anticipates benefits in the form of reduced information asymmetry from publishing aggregated net short positions on a regular basis (including those that are currently confidential). Following the establishment of EU's initial disclosure rules, Jones et al. (2016) indeed document a decline in bid-ask spreads, which they attribute to a reduction in market participants’ concerns about adverse selection. In addition, reduced information asymmetry could help deter manipulation through the spreading of misleading information (Cumming et al., 2011; 2015). More transparency on short positions could for instance discourage short sellers from spreading false rumors. On the other hand, short-sale disclosure could also provide a coordination mechanism for manipulative short sellers. Interest bodies fear that regular publications might create herding or stimulate abusive practices like squeezing short sellers (ESMA, 2017b). Jones et al. (2016) find indications of herding in disclosures by short sellers. Specifically with regard to manipulation, they study rights issues and find “no economically meaningful negative consequences to the disclosure regime” (Jones et al., 2016: p. 3317).

The current literature compares market efficiency and manipulation during disclosure regimes with those prior to the creation of such a regime. The current literature does, however, not provide guidance on the immediate effects of an additional increase in transparency as considered by ESMA (2017a). The accidental disclosure of the full history of short positions by the Netherlands Authority for the Financial Markets (AFM, i.e., the local competent authority) provides a natural experiment which enables us to

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study the immediate effects of a sudden–unexpected–increase in transparency, because the full register (i.e., from November 2012 to January 2017) of both public (i.e., ≥ 0.5%) and confidential short positions (i.e., ≥ 0.2% and < 0.5%) became publicly available.

First, we measure the potential relevance of the disclosure of previously confidential short positions by evaluating a daily updated portfolio based on these positions. On the one hand, small short positions could be unrelated to future stock returns if these positions arise from hedging demands by institutional investors (Jones et al., 2016) or if they are motivated by position holders that are less convinced of their directional views. On the other hand, these short positions could be associated with negative stock returns, as Diether et al. (2009) show that short sellers are generally well-informed investors and Jank et al. (2016) show that some short sellers deliberately remain below the disclosure threshold to protect their private information.

Second, we perform an event study to investigate the effect of the accidental publication of confidential short positions on stock returns in the post-disclosure period. Consistent with herding concerns voiced by industry bodies (ESMA, 2017b), post-disclosure abnormal returns could be negative when other investors interpret short positions as a negative signal from informed investors and consequently sell their holdings or alternatively establish new short positions. Alternatively, post-disclosure abnormal returns could be positive. First, the disclosure event could result in a (perceived) increase of short-selling risk (Engelberg et al., 2018). As the disclosure reveals that aggregate short positions on some stocks are larger than expected, both immediate recall risk and the dynamic risk that less stocks might be available for borrowing in the future could increase (D' Avolio and Perold, 2003). This could result in positive abnormal returns, because (i) Engelberg et al. (2018) find that stocks with more short-selling risk have less short selling and (ii) Boehmer et al. (2018) find a positive effect of covering trades on returns. Second, Jank et al. (2016) show that short sellers avoid crossing the disclosure threshold to keep their positions secret to benefit from superior information. If the disclosure event motivated them to cover their positions, this would also result in positive abnormal returns (Boehmer et al., 2018). In follow-up analyses on the event study, we (i) relate post-disclosure abnormal returns to public and confidential short positions, and (ii) consider the evolution of equity borrowing costs of the shares with disclosed confidential positions.

Considering our first set of analyses, we find that a value-weighted portfolio containing small (confidential) short positions underperforms the market index with a statistically significant 4 basis points (bp) per day. This finding is in accordance with previous research that shows that shorted stocks are typically overvalued (Dechow et al., 2001). We also find that a value-weighted portfolio containing large, public short positions shows outperformance, which suggests there are limitations to arbitraging the predictive ability of short positions (Engelberg et al., 2018).

Considering our second set of analyses, consistent with Jank et al. (2016) and Engelberg et al. (2018), we find evidence for positive abnormal returns after the disclosure of small short positions. Evidence from our cumulative abnormal return regressions is mixed. Although we find a positive impact of confidential short positions, the effect is only significant for stocks that also have public short positions. Results suggest this effect is relative: the larger the confidential short positions relative to the already known public position, the higher the abnormal returns. We also find a consistently significant negative effect of the price of shorting (i.e., average equity borrowing costs measured in the estimation window) on abnormal returns, which suggests post-disclosure positive abnormal returns are associated with stocks that have less short-sale constraints *ex ante*.

In a final analysis, we also analyze the evolution of borrowing costs surrounding the disclosure event. We document a statistically significant decrease in costs, which points at a decrease in the demand for shares by short sellers and/or an increase in the supply available for lending (Saffi and Sigurdsson, 2011). This finding is consistent with short covering and indicates that herding does not seem to play a role after an increase in transparency.

We make two contributions to the literature. First, we contribute to the literature studying abnormal returns associated with shorted stock portfolios (e.g., Desai et al., 2002; Asquith et al., 2005). Whereas the existing literature focuses on the relation between total short interest and future stock returns, we explicitly consider the difference between short interest based on confidential disclosures and publicly available disclosures. Second, we contribute to Jones et al. (2016) who study abnormal returns after the disclosure of public short positions published under EU regulations. They find that regular disclosures have little (i.e., negative but statistically insignificant) immediate impact on stock prices, and that short activity does not change significantly after a disclosure. Instead of deliberate disclosures, we study the accidental disclosure of confidential positions, which thereby provides a natural experiment on increased transparency. Our findings are therefore instrumental to regulatory discussions, since ESMA considered in 2017 to further increase transparency of short positions by publishing aggregate short positions that are currently still confidential.

2. Data and methodology

Our main source of data is the register of all short sales positions (public and confidential) from November 1, 2012 to January 23, 2017. This register was accidentally published by AFM on Tuesday evening January 24, 2017 and remained accessible until Wednesday morning January 25, 2017 (AFM, 2017). In the entire register, there are 14,678 disclosures of which 10,155 are confidential. The number of distinct position holders is 325 of which 320 have held one or more confidential short positions. The number of distinct stocks in the sample is 90 and in all these stocks there were confidential short positions at some point in time. We complement our short sales data with stock returns (including reinvested dividends) from Thomson Reuters Datastream.

2.1. Portfolio analysis entire register

In our first analysis, we use the entire historical short sales register. We aggregate the short positions for each stock over the various position holders on a daily basis. We create two portfolios of which one is based on public short positions and the other on confidential short positions. These portfolios are rebalanced daily based on changes in public or confidential short positions. We weigh stock returns according to the market value of either the public or the confidential short positions. To determine the portfolio performance vis-à-vis the market index, we calculate Jensen's alpha based on the following model:

$$r_{p,t} - r_{f,t} = \alpha_p + \beta_p[r_{m,t} - r_{f,t}] + \beta_{smb} r_{smb,t} + \beta_{hml} r_{hml,t} + \epsilon_{p,t} \tag{1}$$

where r_p captures the daily return on a short portfolio, r_m represents the daily return on the AEX All share index, r_f is the 3-month interest rate on Dutch government bonds, and $r_{smb,t}$ and $r_{hml,t}$ are returns on the small-minus-big capitalization and high-minus-low book equity/market equity portfolio returns (Fama and French, 2012), respectively.[1]

2.2. Event study around accidental publication short register

To study the effect of the publication of confidential short positions, we analyze the post-event effect of publication on returns of stocks shorted at the time of the publication. We only consider the positions outstanding on the last day of the accidentally published register. On this day, the short register shows 57 stocks with either public or confidential short positions. After excluding 5 delisted stocks and 2 recent IPOs, controlling for 1 stock which appeared twice, and excluding a further 3 stocks for missing control variables, we arrive at 46 stocks with confidential short positions, of which 21 stocks with both public and confidential short positions. For these 46 stocks, we apply an event study, where abnormal returns (AR) and cumulative abnormal returns (CAR) are defined as:

$$AR_i(t) = [r_{i,t} - r_{f,t}] - [\widehat{\alpha}_i - \widehat{\beta}_i(r_{m,t} - r_{f,t}) - \widehat{\beta}_{i,smb} r_{smb,t} - \widehat{\beta}_{i,hml} r_{hml,t}] \tag{2}$$

and

$$CAR_i(t_1, t_2) = \sum_{t=t_1}^{t_2} AR_i(t) \tag{3}$$

where $r_{i,t}$ is stock i's return on day t. All other explanatory variables are defined as in Section 2.1. We use an estimation period from 21 January 2016 up to and including 20 January 2017.

2.3. CAR regressions

Next, we test whether larger confidential and/or public short positions can explain cumulative abnormal returns. We regress the CARs for the event on the aggregate outstanding short positions at the disclosure date and on control variables. We use an event window of (0,1) because international media featured the disclosure on day 1, see for example Johnson (2017). We compute aggregate short positions as the sum per stock of all outstanding short positions on the last day of the published register (i.e., January 23, 2017) denoted by CP_i for confidential position and by PP_i for publicly known positions.

$$CAR_i = \alpha + \beta_1 CP_i + \beta_2 PP_i + \beta_4 Controls_i + \epsilon_i \tag{4}$$

where i indicates stock. We include several control variables. According to Miller's theory (1977), firms that are both short-sale constrained and subject to investors' heterogeneous beliefs are more likely to be overvalued. To capture heterogeneous beliefs, we include (i) *Forecast dispersion fiscal year 2016*, which is calculated by dividing the IBES reported standard deviation of analysts' earnings per share (EPS) forecasts for 2016 by the absolute value of the mean analysts' EPS forecast (Boehme et al., 2006), and (ii) *Turnover (%)* which is the average turnover in the estimation window, scaled by the number of outstanding shares and expressed as a percentage (D'Avolio, 2002). We control for the short-sale constraints by including the industry-adjusted costs to borrow (i.e., average abnormal costs, AAC) in the estimation window, which we obtain from FIS ASTEC (D'Avolio, 2002).[2]

3. Results

3.1. Portfolio analysis

Fig. 1 shows the cumulative returns of the public and confidential short portfolios, and of the AEX All-Share index (all in terms of long positions, cf. Jones et al., 2016). This figure shows that both portfolios underperform the market index.

In Table 1, we test the underperformance of the long-portfolios with shorted stocks. Column (1) shows Jensen's alpha results for our calendar-time portfolio based on confidential positions. The alpha value equals −0.0406 which indicates an underperformance of this portfolio of 4.06 bp per day. The portfolio beta is with a value of 1.116 somewhat higher than 1 and the factor loadings on SMB and HML are positive. In total, 1,103 trading days were evaluated in this analysis for which there were on average 43.86 stocks included per day. Column (2) shows that the portfolio with publicly known positions underperforms 9.62 bp per day. On average,

[1] The SMB and HML factor portfolios for solely the Dutch stock market would contain a relatively small number of stocks, and, hence, would not be fully diversified. We therefore relied on the European factors as provided by http://mba.tuck.dartmouth.edu/ restated in Euro. The use of European factors instead of local Dutch factors is further justified by Moerman (2005) who finds that within Europe a European three-factor model provides a fit that is comparable to a local country model.

[2] $AC_i(t) = \textit{Cost to borrow}_i(t) - \textit{Industry cost to borrow}_i(t)$, where cost to borrow is equity borrowing costs expressed as an annualized percentage of the asset's market value on the date stated and industry cost to borrow is the industry average calculated by FIS ASTEC based on the Standard & Poor's global industry classification (GICS) to which a stock belongs. Note that Stratmann and Welborn (2016) and Duong et al. (2017) also analyze these data from FIS ASTEC.

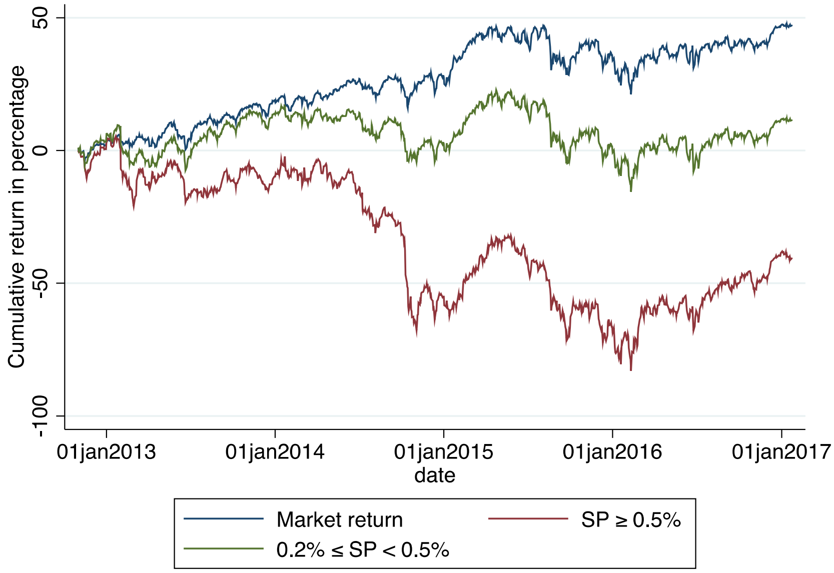

Fig. 1. Cumulative return of value-weighted short portfolios and market returns.

Table 1
Abnormal daily returns (%) of short sales portfolios.

	(1)	(2)
α_{pt}	−0.0406***	−0.0962***
	(0.013)	(0.031)
$r_{mt} - r_{ft}$	1.1160***	1.1460***
	(0.024)	(0.068)
$r_{smb,t}$	0.2260***	0.6440***
	(0.056)	(0.151)
$r_{hml,t}$	0.2270***	0.8960***
	(0.051)	(0.112)
Observations	1,103	1,103
R^2	0.867	0.548
Average number of stocks	43.86	17.36

Note: This table reports estimates of Eq. (1). That is, Jensen's alpha is calculated from the following regression: $r_{pt} - r_{ft} = \alpha_{pt} + \beta_p(r_{mt} - r_{ft}) + \beta_{smb}r_{smb,t} + \beta_{hml}r_{hml,t} + \varepsilon_{pt}$. The number of stocks in the portfolio is an average over time. Column (1) reports estimates for value-weighted portfolios of small short positions, Column (2) reports estimates for value-weighted portfolios of large short positions. Robust standard errors are in round brackets and ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

17.36 stocks per day are included in this portfolio.[3]

3.2. Event study

Table 2 presents (cumulative) average abnormal returns from our event study. We include all stocks that have a short position in the accidentally published register ($n = 46$). Panel A presents average abnormal returns. Column 1 shows days relative to January 25, 2017 (Relative day = 0). Column 2 shows that one day after the publication of the short sales register—the day on which international media featured the disclosure—shorted stocks show an average abnormal return of 0.519%, which is statistically significant at the 10% level. Note that we report the relatively conservative standard errors suggested by Kolari and Pynnönen (2010) to correct for event-induced variance and cross-sectional correlation of abnormal returns. None of the other days around the event show significant average abnormal returns. Panel B shows CARs are significant at 5% over periods $(0,+1)$ and $(+1,+2)$ and significant at 10% over period $(0,+10)$.

[3] For robustness, we construct percentage-weighted portfolios as well (results available upon request). In these portfolios, stock returns are weighted only by the size of the short position in percentages of a stock's market value. In line with Desai et al. (2002), this increases underperformance as the confidential (public) positions portfolio lag the market with a statistically significant 8.23 bp (12.80 bp) on a daily basis.

Table 2
Abnormal returns and cumulative abnormal returns around disclosure.

Relative day	AAR (%)	p-value	Sign.
Panel A: Average abnormal returns (AARs)			
−4	−0.030	0.425	
−3	−0.362	0.912	
−2	0.151	0.155	
−1	−0.230	0.761	
0	0.319	0.121	
1	0.519	0.068	*
2	0.129	0.290	
3	0.251	0.261	
4	0.039	0.263	
5	−0.142	0.657	
6	0.006	0.475	
7	−0.185	0.818	
8	−0.139	0.844	
9	0.110	0.196	
10	0.064	0.443	
Panel B: Cumulative average abnormal returns			
Event window	CAAR (%)	p-value	Sign.
(−4, −1)	−0.471	0.658	
(0, + 1)	0.838	0.038	**
(+ 1, + 2)	0.648	0.044	**
(0, + 10)	0.972	0.098	*

This table reports the event-study results (n = 46), based on Eq. (2) and Eq. (3). The relative day is relative to January 25, 2017 (Relative day = 0). Panel A shows daily abnormal returns on day t, averaged over stocks, AAR (%). In panel B, CAAR (%) shows the cumulative abnormal return starting in day t1 and ending in t2, CAAR(t1, t2) (%). AAR and CAAR p-values are corrected for event-induced variance and cross-sectional correlation of abnormal returns based on Kolari and Pynnönen (2010). ***, **, and * denote statistical significance (Sign.) at the 1%, 5%, and 10% level, respectively.

Increased transparency could, according to ESMA (2017b), lead to different types of pricing inefficiencies. We find evidence for a positive price impact of the disclosure event, so herding is unlikely to drive our results. In the next sections, we use regression analysis to investigate whether CARs associated with disclosure are related to the size of the short positions. Additionally, we discuss possible drivers for these positive returns.

3.3. CAR regressions

Table 3 presents summary statistics of our CAR regressions. This sample concerns stocks with both confidential and public short positions (n = 21). The average CAR(0,1) is 1.16%.

Table 3 also illustrates that confidential short positions are economically relevant because the sum of these positions per stock, CP_i, is on average larger than the sum of public short positions per stock, PP_i. The summary statistics on *Turnover* are comparable in size and these on *Forecast dispersion* are somewhat smaller when compared to those reported by Boehme et al. (2006).

Table 3
Summary statistics CAR regressions.

Variable	Mean	SD	Min.	Max.	N
CAR	1.16	1.57	−1.86	3.72	21
CP (0.2% ≥ Short positions < 0.5%)	2.04	1.27	0.48	4.57	21
PP (Short positions ≥ 0.5%)	1.87	1.72	0.50	5.84	21
CP–PP	0.16	1.59	−3.87	2.39	21
CP + PP	3.91	2.57	0.98	8.74	21
Forecast dispersion fiscal year 2016	0.30	0.30	0.01	1.06	21
Turnover (%)	0.43	0.22	0.10	0.85	21
AAC (%)	0.16	2.95	−4.09	11.73	21

This table reports summary statistics for the regression sample in Column (3) of Table 4. CAR is the cumulative abnormal return (0,1). The sum per stock of all confidential outstanding short positions on the last day of the published register is denoted by *CP (0.2% ≤ Short positions < 0.5%)*. *PP (Short positions ≥ 0.5%)* is the sum per stock of all publicly known short positions. *Forecast dispersion fiscal year 2016* is calculated as the standard deviation of earnings per share (EPS) forecasts divided by the absolute value of the mean EPS forecast. *Turnover (%)* is the average turnover in the estimation window, scaled by the number of outstanding shares. AAC is the average industry-adjusted cost of shorting (i.e. equity borrowing costs) in the estimation window, which is obtained from FIS ASTEC as the difference between firm and industry short sales costs expressed in annual percentage points.

Table 4
CAR regressions.

	(1)	(2)	(3)	(4)	(5)
CP	−0.0772		0.6782*		
	[0.285]		[0.359]		
PP		−0.3918	−0.5605**	0.1177	
		[0.253]	[0.209]	[0.392]	
CP–PP				0.6782*	0.6193**
				[0.359]	[0.218]
CP + PP					0.0588
					[0.196]
Forecast dispersion	1.7666	0.8505	0.3355	0.3355	0.3355
fiscal year 2016	[1.291]	[1.074]	[0.997]	[0.997]	[0.997]
Turnover (%)	0.1602	2.1049	0.3404	0.3404	0.3404
	[1.966]	[1.573]	[1.966]	[1.966]	[1.966]
AAC (%)	−0.1398**	−0.2159***	−0.1684*	−0.1684*	−0.1684*
	[0.062]	[0.064]	[0.082]	[0.082]	[0.082]
Constant	0.8019	0.7713	0.6083	0.6083	0.6083
	[0.733]	[0.729]	[0.633]	[0.633]	[0.633]
Observations	46	21	21	21	21
Adjusted R-squared	−0.0335	0.0669	0.233	0.233	0.233

Note: This table reports estimates of Equation (4). The dependent variable is cumulative abnormal return in percentages over 25 and 26 January 2017. The notes to Table 3 provide an explanation of all explanatory variables. Robust standard errors in round brackets and ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Table 4 presents the results of our CAR regressions. Column (1) and Column (2) of Table 4 report regressions of CAR on the separate samples with confidential short positions (i.e. CP_i, $n = 46$) and publicly known short positions (i.e. PP_i, $n = 21$), respectively. Both regressions show an effect that is negative but not statistically significant. Column (3) shows the result of regressing CARs on both public and confidential short positions. Stocks with larger confidential short positions show higher CARs. Interestingly, the sample in Column (3) is the same as in Column (2), but only when we control for publicly known short positions the effect of confidential short positions becomes statistically significant and positive. Because the size of confidential short positions is the only new information created by the disclosure, we expect that–for stocks with both confidential and public short positions–it is the size of previously confidential short positions *relative* to the already publicly known short positions that matters. To test this expectation, we include a variable that captures the difference between CP and PP, i.e., CP–PP,[4] together with PP in Column (4), and together with the total short positions, i.e., CP + PP, in Column (5). The results in Column (4) and Column (5) support our interpretation, because only the differential short position CP–PP is statistically significant and neither PP in Column (4) nor the total short position CP + PP in Column (5) are statistically significant.[5] The effect of CP–PP is also economically significant: an increase of CP–PP by one standard deviation is associated with a CAR that is higher by $1.59 \times 0.62 = 0.99\%$. In unreported results, we include CP–PP together with CP and again find that only CP–PP is statistically significant.

The only control variable that is statistically significant in all specifications is average aggregate short sales costs (AAC), which suggests that post-disclosure abnormal returns are higher for stocks with lower *ex ante* short sale constraints. The effect of AAC is also economically significant: an increase of AAC by one standard deviation is associated with a CAR that is lower by $2.95 \times 0.17 = 0.50\%$.

In sum, we only find evidence for an effect of the disclosure of confidential short positions on CAR for stocks that have both publicly known and previously confidential short positions. Our results suggest this is a relative effect: stocks with larger confidential positions compared to publicly known positions have higher CARs. Positive CARs are also associated with lower *ex ante* short sales constraints.

3.4. Abnormal short sales costs

To further investigate whether short sellers engage in short covering after the disclosure, we would like to investigate short positions after the event. Because this data is not available, we consider the evolution of industry-adjusted costs to borrow obtained from FIS ASTEC. In Section 3.3, we found that AAC measured during the estimation period negatively affects post-disclosure returns. Here we analyze these costs measured around the event date. Table 5, Column (2), shows the average of first differenced abnormal short sales costs (Δ AAC). One day after the publication of the short sales register, the AAC decreases by 5.2 basis points. Column (3) reports p-values that show this effect is significant at the 1% level. A drop in AAC indicates less shorting demand (or more supply of shares to borrow), which is consistent with the positive AAR shown in Table 2. Panel B shows significance tests for cumulative

[4] Note that as a robustness check we included the ratio of CP to PP (CP / PP) instead of this difference. Results are qualitatively the same and available upon request.

[5] Note that the coefficient of CP–PP in in Column (4) is exactly the same as the coefficient of CP in Column (3). Because we also control for PP in Column (4), this is true by construction. Obviously, it is impossible to include CP, PP and CP–PP in the same regression because each one can always be written as a linear combination of the other two.

Table 5
Abnormal short sales costs and cumulative abnormal short sales costs around disclosure.

Relative day	Δ AAC (%)	p-value	Sign.
Panel A: Average abnormal short sales costs (AAC)			
−4	−0.008	0.599	
−3	0.013	0.486	
−2	0.009	0.406	
−1	0.046	0.340	
0	0.042	0.402	
1	−0.052	0.003	***
2	−0.088	0.395	
3	0.007	0.716	
4	−0.020	0.122	
5	0.021	0.135	
6	−0.021	0.330	
7	−0.020	0.030	**
8	0.010	0.502	
9	−0.016	0.343	
10	0.010	0.288	
Panel B: Cumulative abnormal short sales costs			
Event window	Δ CAAC (%)	p-value	Sign.
(−4, −1)	0.060	0.284	
(0, + 1)	−0.009	0.865	
(+ 1, + 2)	−0.138	0.174	
(0, + 10)	−0.123	0.082	*

This table reports the event-study results (n = 46). The methodology follows Equation (2) and Equation (3), with (cumulative) abnormal returns replaced by (cumulative) abnormal short sales costs as also defined in Section 3.4. The relative day is relative to January 25, 2017 (Relative day = 0). Panel A shows first difference of the abnormal cost of shorting averaged over 46 stocks. Cost of shorting is obtained from FIS ASTEC as the difference between firm and industry short sales costs expressed in annual percentage points. In panel B, Δ CAAC (%) shows the cumulative abnormal cost of shorting in day t1 and ending in t2, CAAC(t1,t2) (%). ***,**, and * denote statistical significance (Sign.) at the 1%, 5%, and 10% level, respectively.

average abnormal short sale costs (Δ CAAC), which shows they are significantly negative only after the event. It seems unlikely that these results are driven by a reduction in supply, so we interpret them as a reduced appetite for short positions by short sellers, either because existing short sellers cover their positions or demand for new short positions is (temporarily) reduced.

4. Conclusion

We analyze the accidental disclosure of confidential short positions by the Netherlands Authority for the Financial Markets. We find in a calendar-time setting that confidential short positions are associated with underperforming stocks, as is the case with publicly known short positions. Therefore surprisingly, in an event study setting, we find evidence that the publication of confidential short positions is associated with positive abnormal returns. A possible explanation for this finding is that disclosure suddenly increases perceived short-selling risk (Engelberg et al., 2018) on disclosed positions, which motivates short sellers to cover these positions, or temporarily reduce their demand for short positions on these stocks. Alternatively, if short sellers benefit from the secrecy of their short position, it becomes less attractive to hold them once their short positions are revealed (Jank et al., 2016). Both interpretations are consistent with our finding of a post-event drop in abnormal short sales costs. Future research could try to disentangle these two explanations.

Currently, a limitation of our study is that we do not observe short sales positions after their accidental publication; therefore, we could not empirically identify the exact reasons for the documented stock price increase after the publication. Conditional on data availability, it would therefore be interesting to further analyze the possible post-event adjustment of short sellers' positions suggested by our findings. Another limitation of our study is that the sample of stocks whose confidential short positions were uncovered is relatively small.

Regulatory bodies (e.g., ESMA) frequently evaluate the effectiveness of disclosure policies and consider potential changes. Our findings could inform policy makers on possible immediate effects of increased transparency. In particular, we suggest two relevant policy implications. First, the change of the short selling regime so that previously confidential positions become publicly known, is likely to result in an immediate drop in short selling activity and a simultaneous increase in stock prices. Second, making these positions publicly available is unlikely to lead to increased predatory practices like herding and short squeezes, since we do not find evidence of negative abnormal returns or increased short positions as a result of confidential positions being uncovered.

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