

Internet Appendix for "Why Do Short Sellers Like Qualitative News?"

Table IA.1. Short Selling as a Function of Information Intangibility

Table IA.1 reports additional specifications to complement Table 2 of the paper. In Panel A, we use the contemporaneous stock return as an additional control variable. In Panel B, we use ABN_INF_INTANG_DUMMY, which is computed from information intangibility divided by its mean over the past 125 trading days, as an alternative explanatory variable. In Panel C, we use alternative measures of the short sale turnover: ABN_REL_SHORT_SALE_TURNOVER (equal to the natural logarithm of REL_SHORT_SALE_TURNOVER divided by its mean over the past 125 trading days) and DIFF_IN_ABN_TURNOVER (defined as the difference between ABN_SHORT_SALE_TURNOVER and ABN_TOTAL_TURNOVER, where both variables are defined as the respective natural logarithms of the today's value divided by the corresponding past 125-day average). In Panel D, we use the continuous version of information intangibility instead of the dummy variable. In Panel E, we reestimate the main regression using information intangibility and controls calculated after excluding articles from newspapers (columns 1 and 2), newswires (columns 3 and 4), and press releases (columns 5 and 6). Standard variable definitions appear in the tables of the paper. All standard errors are double-clustered at the firm and date level. *t*-statistics are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively. The sample for this regression consists of news days from July 2006 to Dec. 2008 (excluding the time of the short sale ban from Sept. 19, 2008 to Oct. 8, 2008).

Panel A. Contemporaneous Return as an Additional Control

Independent Variables	Dependent Variables:					
	REL_SHORT_SALE_TURN.	REL_SHORT_SALE_TURN.	REL_SHORTING	REL_SHORTING	REL_CLOSING	REL_CLOSING
	1	2	3	4	5	6
INF_INTANG_DUMMY	0.0120*** (4.90)	0.0096*** (4.31)	0.0036** (2.54)	0.0026** (1.97)	0.0089*** (5.19)	0.0073*** (4.80)
RETURN _{<i>i</i>}	-0.0974 (-0.87)	-0.3222*** (-7.85)	-0.0091 (-0.21)	-0.0160 (-0.72)	-0.1064 (-1.22)	-0.3531*** (-10.36)
No. of obs.	196,844	196,844	203,816	203,816	196,844	196,844
Adj. <i>R</i> ²	0.22	0.28	0.18	0.21	0.14	0.20
Controls	As in Table 2 of the paper	As in Table 2 of the paper	As in Table 2 of the paper	As in Table 2 of the paper	As in Table 2 of the paper	As in Table 2 of the paper
Quarterly Fixed Effects	Yes	No	Yes	No	Yes	No
Daily Fixed Effects	No	Yes	No	Yes	No	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes

Panel B. Abnormal Information Intangibility

Independent Variables	Dependent Variables:					
	REL_SHORT_SALE_TURN.	REL_SHORT_SALE_TURN.	REL_SHORTING	REL_SHORTING	REL_CLOSING	REL_CLOSING
	1	2	3	4	5	6
ABN_INF_INTANG_DUMMY	0.0144*** (6.52)	0.0118*** (5.75)	0.0060*** (4.61)	0.0047*** (3.83)	0.0099*** (6.18)	0.0083*** (5.68)
No. of obs.	196,204	196,204	203,151	203,151	196,204	196,204
Adj. <i>R</i> ²	0.22	0.28	0.17	0.21	0.14	0.20
Controls	As in Table 2 of the paper	As in Table 2 of the paper	As in Table 2 of the paper	As in Table 2 of the paper	As in Table 2 of the paper	As in Table 2 of the paper
Quarterly Fixed Effects	Yes	No	Yes	No	Yes	No
Daily Fixed Effects	No	Yes	No	Yes	No	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes

Panel C. Alternative Specification of Short Sale Turnover

Independent Variables	Dependent Variables:							
	ABN_REL_	ABN_REL_	ABN_REL_	ABN_REL_	DIFF_IN_	DIFF_IN_	DIFF_IN_	DIFF_IN_
	S_S_	S_S_	S_S_	S_S_	ABN_	ABN_	ABN_	ABN_
	TURN.	TURN.	TURN.	TURN.	TURN.	TURN.	TURN.	TURN.
	1	2	3	4	5	6	7	8
INF_INTANG_	0.0322***	0.0246***			0.0353***	0.0246***		
DUMMY	(4.82)	(4.32)			(5.00)	(4.05)		
ABN_INF_INTANG_			0.0360***	0.0292***			0.0370***	0.0275***
DUMMY			(5.74)	(5.32)			(5.58)	(4.61)
No. of obs.	193,570	193,570	192,933	192,933	164,948	164,948	164,385	164,385
Adj. R ²	0.05	0.14	0.05	0.14	0.05	0.14	0.05	0.14
Controls	As in Table 2 of the paper	As in Table 2 of the paper	As in Table 2 of the paper	As in Table 2 of the paper	As in Table 2 of the paper	As in Table 2 of the paper	As in Table 2 of the paper	As in Table 2 of the paper
Quarterly Fixed Effects	Yes	No	Yes	No	Yes	No	Yes	No
Daily Fixed Effects	No	Yes	No	Yes	No	Yes	No	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Panel D. Continuous Information Intangibility

Independent Variables	Dependent Variables:					
	REL_SHORT_	REL_SHORT_	ABN_REL_	ABN_REL_	DIFF_IN_	DIFF_IN_
	SALE_TURN.	SALE_TURN.	S_S_	S_S_	ABN_TURN.	ABN_TURN.
	1	2	3	4	5	6
INF_INTANG	0.1137***	0.1040***	0.3840***	0.3497***	0.3979***	0.3337***
	(2.72)	(2.70)	(3.59)	(3.67)	(3.45)	(3.21)
No. of obs.	196,844	196,844	193,570	193,570	164,948	164,948
Adj. R ²	0.22	0.28	0.05	0.14	0.05	0.14
Controls	As in Table 2 of the paper	As in Table 2 of the paper	As in Table 2 of the paper	As in Table 2 of the paper	As in Table 2 of the paper	As in Table 2 of the paper
Quarterly Fixed Effects	Yes	No	Yes	No	Yes	No
Daily Fixed Effects	No	Yes	No	Yes	No	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes

Panel E. Excluding Different Types of Articles

Independent Variables	Dependent Variable: REL_SHORT_SALE_TURNOVER					
	No Newspaper	No Newspaper	No Newswires	No Newswires	No PR	No PR
	1	2	3	4	5	6
INF_INTANG	0.1408***	0.0916**	0.1301***	0.1027**	0.1297***	0.1225***
	(3.39)	(2.47)	(2.73)	(2.40)	(3.37)	(3.41)
No. of obs.	157,660	157,660	180,894	180,894	141,142	141,142
Adj. R ²	0.22	0.28	0.22	0.27	0.21	0.27
Controls	As in Table 2 of the paper	As in Table 2 of the paper	As in Table 2 of the paper	As in Table 2 of the paper	As in Table 2 of the paper	As in Table 2 of the paper
Quarterly Fixed Effects	Yes	No	Yes	No	Yes	No
Daily Fixed Effects	No	Yes	No	Yes	No	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes

Table IA.2. Return Mean-Reversion as a Function of Information Intangibility

Table IA.2 complements Table 4 of the paper and reports the results from daily Fama–MacBeth (1973) regressions with Newey–West (1987) correction that examine how information intangibility of news affects daily stock volatility. In Panel A, the dependent variable is the absolute contemporaneous return. In Panel B, the dependent variable is the squared contemporaneous return. Standard variable definitions appear in the tables of the paper. *t*-statistics are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively. The sample for this regression consists of news days from Jan. 1999 to Dec. 2008.

Panel A. Absolute Return

Independent Variables	Dependent Variables:					
	ABSOLUTE_ RETURN 1	ABSOLUTE_ RETURN 2	ABSOLUTE_ RETURN 3	ABSOLUTE_ RETURN 4	ABSOLUTE_ RETURN 5	ABSOLUTE_ RETURN 6
INF_INTANG	-0.0169*** (-8.99)	-0.0210*** (-11.91)	-0.0237*** (-15.02)	-0.0233*** (-17.26)	-0.0215*** (-14.78)	-0.0214*** (-17.55)
SIZE	-0.0023*** (-16.68)	-0.0029*** (-10.44)	-0.0011*** (-3.34)	-0.0010*** (-2.59)	-0.0011*** (-3.32)	-0.0009** (-2.52)
MARKET_TO_BOOK	0.0005*** (9.13)	0.0006*** (9.50)	0.0004*** (7.02)	0.0004*** (7.72)	0.0004*** (6.96)	0.0004*** (7.62)
NUMBER_OF_ARTICLES		0.0047*** (22.18)		0.0055*** (32.97)		0.0053*** (32.71)
ARTICLE_SENTIMENT		-0.0497*** (-9.74)		-0.0749*** (-18.78)		-0.0719*** (-19.72)
BREADTH_OF_OWN.		-0.0127*** (-4.07)		0.0098** (2.20)		0.0099** (2.24)
NUMBER_OF_ANALYSTS		0.0032*** (9.78)		-0.0013*** (-3.29)		-0.0013*** (-3.35)
ANALYST_DISPERSION		0.3954*** (14.13)		0.3202*** (8.45)		0.3227*** (8.49)
INST_OWNERSHIP		0.0018* (1.90)		-0.0059*** (-4.10)		-0.0060*** (-4.16)
No. of obs.	833,689	723,488	833,689	723,488	833,689	723,488
Adj. R^2	0.22	0.26	0.22	0.24	0.29	0.32
Daily Fixed Effects	Yes	Yes	No	No	Yes	Yes
Quarter Fixed Effects	No	No	Yes	Yes	No	No
Firm Fixed Effects	No	No	Yes	Yes	Yes	Yes

Panel B. Squared Return

Independent Variables	Dependent Variables:					
	SQUARED_ RETURN 1	SQUARED_ RETURN 2	SQUARED_ RETURN 3	SQUARED_ RETURN 4	SQUARED_ RETURN 5	SQUARED_ RETURN 6
INF_INTANG	-0.0016*** (-10.36)	-0.0019*** (-13.18)	-0.0021*** (-14.44)	-0.0021*** (-16.39)	-0.0019*** (-14.25)	-0.0019*** (-16.75)
SIZE	-0.0002*** (-17.46)	-0.0002*** (-10.63)	-0.0001*** (-3.46)	-0.0001*** (-2.62)	-0.0001*** (-3.44)	-0.0001** (-2.56)
MARKET_TO_BOOK	0.0000*** (9.00)	0.0000*** (9.30)	0.0000*** (6.34)	0.0000*** (6.91)	0.0000*** (6.29)	0.0000*** (6.83)
NUMBER_OF_ARTICLES		0.0004*** (20.97)		0.0005*** (29.60)		0.0005*** (29.52)
ARTICLE_SENTIMENT		-0.0046*** (-11.10)		-0.0064*** (-18.12)		-0.0061*** (-18.72)
BREADTH_OF_OWN.		-0.0009*** (-3.85)		0.0008** (1.96)		0.0008** (1.98)
NUMBER_OF_ANALYSTS		0.0002*** (7.94)		-0.0001*** (-3.03)		-0.0001*** (-3.09)
ANALYST_DISPERSION		0.0309*** (11.92)		0.0290*** (8.31)		0.0292*** (8.34)
INST_OWNERSHIP		0.0000 (0.16)		-0.0006*** (-4.88)		-0.0006*** (-4.94)
No. of obs.	833,689	723,488	833,689	723,488	833,689	723,488
Adj. R^2	0.19	0.22	0.18	0.20	0.25	0.27
Daily Fixed Effects	Yes	Yes	No	No	Yes	Yes
Quarter Fixed Effects	No	No	Yes	Yes	No	No
Firm Fixed Effects	No	No	Yes	Yes	Yes	Yes

Table IA.3. Liquidity as a Function of Information Intangibility

Table IA.3 complements Table 5 of the paper and reports the results from daily panel regressions that examine how information intangibility affects stock liquidity. The dependent variable is BID_ASK_SPREAD. In Panel A, we perform the analysis on the entire sample. In Panel B, we reestimate the regression using information intangibility calculated after the exclusion of articles containing words "volume," "turnover," or "return." Standard variable definitions appear in the tables of the paper. All standard errors are double-clustered at the firm and date level. *t*-statistics are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively. The sample for this regression consists of news days from Jan. 1999 to Dec. 2008.

Panel A. Entire Sample

Independent Variables	Dependent Variables:				
	BID_ASK_SPREAD 1	BID_ASK_SPREAD 2	BID_ASK_SPREAD 3	BID_ASK_SPREAD 4	BID_ASK_SPREAD 5
INF_INTANG	-0.1531*** (-3.00)	-0.1349*** (-3.14)	-0.0941*** (-2.99)	-0.0583* (-1.89)	-0.0580*** (-4.85)
SIZE	-0.0841*** (-22.17)	-0.0994*** (-10.74)	-0.1325*** (-10.73)	-0.1323*** (-10.74)	-0.0351*** (-9.28)
MARKET_TO_BOOK	-0.0076*** (-5.60)	-0.0069*** (-5.02)	-0.0032* (-1.87)	-0.0032* (-1.87)	-0.0009 (-1.61)
BREADTH_OF_OWNERSHIP		0.3860*** (4.02)	0.9742*** (5.64)	0.9768*** (5.66)	0.2893*** (5.40)
NUMBER_OF_ANALYSTS		-0.0753*** (-5.76)	-0.0169 (-1.19)	-0.0166 (-1.18)	-0.0031 (-0.70)
ANALYST_DISPERSION		7.4839*** (5.41)	6.5629*** (4.96)	6.5852*** (5.00)	1.8121*** (4.68)
INST_OWNERSHIP		-0.0962*** (-2.99)	-0.1801*** (-3.55)	-0.1823*** (-3.60)	-0.0427*** (-2.69)
NUMBER_OF_ARTICLES		0.0104** (2.51)	0.0226*** (8.56)	0.0264*** (11.04)	0.0136*** (14.39)
ARTICLE_SENTIMENT		-0.9769*** (-5.77)	-0.7550*** (-8.08)	-0.5646*** (-6.42)	-0.1923*** (-5.16)
AMIHUDDILLIQUIDITY _{t-1}					0.0104*** (12.71)
BID_ASK_SPREAD _{t-1}					0.6824*** (88.88)
No. of obs.	788,702	722,445	722,445	722,445	721,316
Adj. R ²	0.32	0.34	0.45	0.49	0.73
Daily Fixed Effects	Yes	Yes	No	Yes	Yes
Quarterly Fixed Effects	No	No	Yes	No	No
Firm Fixed Effects	No	No	Yes	Yes	Yes

Panel B. Excluding Articles Containing Words "Volume," "Turnover," or "Return"

Independent Variables	Dependent Variables:				
	BID_ASK_SPREAD 1	BID_ASK_SPREAD 2	BID_ASK_SPREAD 3	BID_ASK_SPREAD 4	BID_ASK_SPREAD 5
INF_INTANG	-0.1357*** (-2.69)	-0.1231*** (-2.98)	-0.0935*** (-2.94)	-0.0612* (-1.96)	-0.0591*** (-4.87)
No. of obs.	725,029	664,875	664,875	664,875	663,775
Adj. R ²	0.32	0.34	0.45	0.49	0.73
Controls	As in Panel A	As in Panel A	As in Panel A	As in Panel A	As in Panel A
Daily Fixed Effects	Yes	Yes	No	Yes	Yes
Quarterly Fixed Effects	No	No	Yes	No	No
Firm Fixed Effects	No	No	Yes	Yes	Yes

Table IA.4. Effect of Olympic Games on the Relationship between Liquidity and Information Intangibility

Table IA.4 complements Table 7 of the paper and reports the results from daily panel regressions that examine how the relationship between liquidity and information intangibility changes during the Olympic Games. The dependent variable is BID_ASK_SPREAD. In column 4, we add four fixed effects for the quarters within a year and interact them with INF_INTANG. Standard variable definitions appear in the tables of the paper. All standard errors are double-clustered at the firm and date level. *t*-statistics are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively. The sample for this regression consists of news days from Jan. 1999 to Dec. 2008.

Independent Variables	Dependent Variables:			
	BID_ASK_ SPREAD 1	BID_ASK_ SPREAD 2	BID_ASK_ SPREAD 3	BID_ASK_ SPREAD 4
INF_INTANG × OLYMPIC_DUMMY	0.2575*** (3.79)	0.2664*** (3.95)	0.2181*** (3.23)	0.2765*** (3.77)
INF_INTANG	-0.0544 (-1.47)	-0.0990*** (-3.15)	-0.0622*** (-6.80)	
OLYMPIC_DUMMY	-0.0428*** (-4.98)	-0.0398*** (-4.79)	-0.3404 (-0.00)	-0.0396*** (-4.75)
SIZE	-0.1059*** (-9.68)	-0.1325*** (-10.73)	-0.1323*** (-10.74)	-0.1324*** (-10.71)
MARKET_TO_BOOK	-0.0030 (-1.56)	-0.0032* (-1.87)	-0.0032* (-1.83)	-0.0032* (-1.87)
BREADTH_OF_OWNERSHIP		0.9741*** (5.64)	0.9767*** (5.66)	0.9731*** (5.63)
NUMBER_OF_ANALYSTS		-0.0169 (-1.19)	-0.0166 (-1.17)	-0.0168 (-1.19)
ANALYST_DISPERSION		6.5642*** (4.96)	6.5853*** (5.00)	6.5673*** (4.96)
INST_OWNERSHIP		-0.1802*** (-3.55)	-0.1824*** (-3.60)	-0.1802*** (-3.55)
NUMBER_OF_ARTICLES		0.0225*** (8.53)	0.0264*** (8.62)	0.0225*** (8.51)
ARTICLE_SENTIMENT		-0.7553*** (-8.08)	-0.5642*** (-6.41)	-0.7547*** (-8.07)
No. of obs.	788,702	722,445	722,445	722,445
Adj. R^2	0.44	0.45	0.49	0.45
Quarterly Fixed Effects	Yes	Yes	No	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes
Daily Fixed Effects	No	No	Yes	No
Quarter Fixed Effects × INF_INTANG	No	No	No	Yes

Table IA.5. Short Selling Profitability as a Function of Information Intangibility

Table IA.5 complements Table 8 of the paper and reports the results from daily Fama–MacBeth (1973) regressions with Newey–West (1987) correction that examine how short sellers' profitability is mediated by information intangibility. We regress future returns (over the 10- trading day horizon (Panel A) or 30- trading day horizon (Panel B)) on INF_INTANG interacted with SHORTING_DUMMY and REL_SHORTING_DUMMY. In columns 1 and 2 we use raw returns. In columns 3 to 4 we repeat the analysis for market-adjusted returns. Standard variable definitions appear in the tables of the paper. *t*-statistics are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively. The sample for this regression consists of news days from July 2006 to Dec. 2008 (excluding the time of the short sale ban from Sept. 19, 2008 to Oct. 8, 2008).

Panel A. 10-Day Horizon

Independent Variables	Dependent Variables:			
	RETURN	RETURN	MKT_ADJ_RET.	MKT_ADJ_RET.
	<i>t</i> +1 to <i>t</i> +10 1	<i>t</i> +1 to <i>t</i> +10 2	<i>t</i> +1 to <i>t</i> +10 3	<i>t</i> +1 to <i>t</i> +10 4
SHORTING_DUMMY × INF_INTANG	0.0086 (0.97)		0.0079 (0.89)	
REL_SHORTING_DUMMY × INF_INTANG		-0.0040 (-0.45)		-0.0038 (-0.43)
SHORTING_DUMMY	-0.0016** (-1.99)		-0.0016* (-1.84)	
REL_SHORTING_DUMMY		-0.0017** (-2.51)		-0.0017** (-2.54)
INF_INTANG	-0.0078 (-1.00)	0.0015 (0.18)	-0.0082 (-1.05)	0.0007 (0.08)
No. of obs.	243,323	243,323	243,323	243,323
Newey–West Lags	10	10	10	10
Controls	As in Table 8 of the paper	As in Table 8 of the paper	As in Table 8 of the paper	As in Table 8 of the paper

Panel B. 30-Day Horizon

Independent Variables	Dependent Variables:			
	RETURN	RETURN	MKT_ADJ_RET.	MKT_ADJ_RET.
	<i>t</i> +1 to <i>t</i> +30 1	<i>t</i> +1 to <i>t</i> +30 2	<i>t</i> +1 to <i>t</i> +30 3	<i>t</i> +1 to <i>t</i> +30 4
SHORTING_DUMMY × INF_INTANG	0.0177 (0.81)		0.0180 (0.81)	
REL_SHORTING_DUMMY × INF_INTANG		-0.0027 (-0.16)		-0.0014 (-0.08)
SHORTING_DUMMY	-0.0052*** (-2.93)		-0.0046** (-2.52)	
REL_SHORTING_DUMMY		-0.0042** (-2.27)		-0.0041** (-2.07)
INF_INTANG	-0.0219 (-1.46)	-0.0085 (-0.57)	-0.0265 (-1.60)	-0.0133 (-0.84)
No. of obs.	203,755	203,755	203,755	203,755
Newey–West Lags	30	30	30	30
Controls	As in Table 8 of the paper	As in Table 8 of the paper	As in Table 8 of the paper	As in Table 8 of the paper

Table IA.6. Short Selling as a Function of Information Intangibility: The Effect of Olympic Games

Table IA.6 complements Table 9 of the paper and reports the results from daily panel regressions that examine how the relation between information intangibility and short sellers' trading changes during the Olympic Games. In columns 1 and 3, the regression is run only on the subsample of days during the Olympic Games. In columns 2 and 4, the regression is run on the subsample of days when the Olympic Games are not held. In Panel A (Panel B), the dependent variable is REL_SHORTING (REL_CLOSING). Standard variable definitions appear in the tables of the paper. All standard errors are double-clustered at the firm and date level. *t*-statistics are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively. The sample for this regression consists of news days from July 2006 to Dec. 2008.

Panel A. Relative Shorting

Independent Variables	Dependent Variable: REL_SHORT_SALE_TURNOVER			
	Olympic Games 1	No Olympic Games 2	Olympic Games 3	No Olympic Games 4
INF_INTANG_DUMMY	-0.0007 (-0.07)	0.0037** (2.57)	-0.0018 (-0.18)	0.0027** (1.97)
RETURN _{<i>t</i>-1}	0.3160* (1.65)	0.1934*** (4.78)	0.1808 (1.09)	0.1752*** (7.99)
RETURN _{<i>t</i>-2}	0.0993 (0.73)	0.1319*** (2.60)	-0.0572 (-0.33)	0.1399*** (5.57)
NUMBER_OF_ARTICLES	-0.0223*** (-3.17)	-0.0210*** (-13.30)	-0.0227*** (-3.53)	-0.0185*** (-12.38)
ARTICLE_SENTIMENT	-0.0432 (-0.10)	0.2280*** (3.02)	-0.0383 (-0.08)	0.2629*** (3.59)
SIZE		-0.0367*** (-4.31)		-0.0367*** (-4.31)
MARKET_TO_BOOK		0.0014 (0.93)		0.0014 (0.93)
BREADTH_OF_OWNERSHIP		-0.0294 (-0.29)		-0.0321 (-0.32)
NUMBER_OF_ANALYSTS		-0.0109 (-1.27)		-0.0109 (-1.28)
ANALYST_DISPERSION		-0.9787** (-2.57)		-0.9872*** (-2.58)
INST_OWNERSHIP		0.0456 (1.14)		0.0435 (1.09)
No. of obs.	4,121	200,636	4,121	200,636
Adj. <i>R</i> ²	0.24	0.18	0.25	0.21
Quarterly Fixed Effects	Yes	Yes	No	No
Daily Fixed Effects	No	No	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes

Panel B. Relative Closing

Independent Variables	Dependent Variable: REL_SHORT_SALE_TURNOVER			
	Olympic Games 1	No Olympic Games 2	Olympic Games 3	No Olympic Games 4
INF_INTANG_DUMMY	-0.0015 (-0.13)	0.0089*** (5.09)	-0.0041 (-0.37)	0.0071*** (4.59)
RETURN _{t-1}	0.6736** (2.55)	-0.0547 (-0.67)	0.3568* (1.74)	-0.1791*** (-3.90)
RETURN _{t-2}	-0.0525 (-0.15)	0.0247 (0.22)	-0.1990 (-0.76)	-0.0720* (-1.65)
NUMBER_OF_ARTICLES	-0.0116 (-1.48)	-0.0298** (-14.05)	-0.0105 (-1.41)	-0.0271*** (-14.66)
ARTICLE_SENTIMENT	0.5347 (0.94)	0.2207** (2.10)	0.6098 (1.07)	0.2612*** (2.62)
SIZE		-0.0429*** (-4.41)		-0.0436*** (-4.46)
MARKET_TO_BOOK		0.0005 (0.23)		0.0005 (0.26)
BREADTH_OF_OWNERSHIP		0.1068 (0.96)		0.0921 (0.82)
NUMBER_OF_ANALYSTS		-0.0141 (-1.50)		-0.0148 (-1.59)
ANALYST_DISPERSION		-0.4852 (-0.98)		-0.4765 (-0.95)
INST_OWNERSHIP		0.1212*** (2.71)		0.1195*** (2.67)
No. of obs.	4,120	193,664	4,120	193,664
Adj. R ²	0.27	0.14	0.29	0.20
Quarterly Fixed Effects	Yes	Yes	No	No
Daily Fixed Effects	No	No	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes

Appendix IA.1. Construction of Tangibility Measures.

We construct two measures of the tangibility of news content. Our main measure, INF_INTANG, is based on the ratio of the number of numeric sequences in the article to the number of words in the article as reported by Factiva. A numeric sequence is defined as a sequence of symbols 0-9 (that can also contain . or , inside) bordered by any nonalphanumeric symbol (e.g., ^-?!-%\$&*@()[]<>) or a space. In a robustness check, we use a second measure, INF_INTANG_DIGIT, which counts the ratio of the number of numeric symbols to the total number of symbols in the article. The total number of symbols includes punctuation marks but excludes spaces and tabs.

The following article featuring IBM illustrates the application of our approach to measuring news tangibility. Separate numeric sequences are highlighted.

“International Business Machines Corp. was again the top winner of patents in the United States in 1998, while six Japanese firms crowded the top 10 list, a U.S. patent research firm reported Sunday. IBM patented 2,682 cases, up 54% from the previous year, to maintain the top notch for the sixth year on end. Software-related technology accounted for more than half, IFI/Plenum Data Corp. said. Canon Inc. ranked second with an outdistanced 1,934 cases, followed by NEC Corp. with 1,632 cases.

The total number of patents granted in the year surged 32.8% to hit an all-time high of 151,024 cases, IFI/Plenum Data said. Notable was Samsung Electronics Co. of South Korea's giant leap to sixth from 16th place with 1,306 cases, a 2.2-fold increase. Motorola Inc. was fourth with 1,428 cases, followed by Sony Corp. with 1,321 cases. Fujitsu Ltd. ranked seventh with 1,205, leading Toshiba Corp. with 1,194, Eastman Kodak Co. with 1,125 and Mitsubishi Electric Corp. with 1,120. “

This articles has:

Number of numeric symbols = 61

Total number of symbols = 816

Number of numeric sequences = 16

Number of words as reported by Factiva = 199

Tangibility ratio 1 = $61 / 816 = 7.48\%$

Tangibility ratio 2 = $16 / 199 = 8.04\%$

Appendix IA.2. Examples of Articles with Distinct Tangibility Scores

Following are the examples of three articles about the General Motors Corporation of about equal size appearing in the same month (Jan. 1999) and the same source (Reuters Newswires) that fall in the top, middle, and bottom tercile, respectively, by both measures of news tangibility.

Article 1:

Time and date: 12:06, 01/06/1999

Source: Reuters News

Title: GM U.S. December sales post 3.1% gain.

“General Motors Corp. on Wednesday reported a 3.1 percent increase in total U.S. sales to 407,487 for December, better than analysts expected, but still closed out the year down 3.3 percent.

GM, Detroit's No. 1 automaker, said monthly car sales, including those of its Saab affiliate, were up 1.9 percent to 216,318. Total truck sales, including medium-duty trucks, were up a surprisingly strong 4.5 percent to 191,169. Analysts had forecast a total decline of as much as 5 percent for December.

GM said its December truck sales, and the 2,150,076 trucks it sold in all of 1998, were both record numbers. Trucks include pickup trucks, sport utilities and minivans. Car sales for the whole year fell 8.6 percent to 2,458,688, in part reflecting two labour strikes in the summer.

Earlier, Toyota Motor Corp., Japan's largest automaker, said its December U.S. vehicle sales jumped 19 percent to 138,720. Sales for all of 1998 hit a record 1,361,025, an increase of 10.6 percent. Toyota's Camry sedan had total 1998 sales of 429,575, making it the best-selling car in the U.S. for the second year in a row.

Honda Motor Co. Ltd. reported a December U.S. vehicle sales gain of 6.3 percent to 83,936. Sales for the year rose 7.4 percent to 1,009,600 units.

On Tuesday, Ford Motor Co. reported light vehicle sales increased 6.8 percent to 320,290. DaimlerChrysler AG said sales for all brands except Mercedes-Benz rose 6.9 percent to 203,325.“

This article has:

Tangibility ratio 1 = $112 / 1,195 = 9.37\%$

Tangibility ratio 2 = $28 / 293 = 9.56\%$

Article 2:

Time and date: 10:35, 01/19/1999

Source: Reuters News

Title: Russian AvtoVAZ carmaker still in talks with GM.

“Russia's largest carmaker AvtoVAZ said Tuesday that revised plans for joint production with General Motors Corp. were still being hammered out since Russia's severe economic crisis took hold last August.

AvtoVAZ's chief engineer Vladimir Presipkinsky told journalists that negotiations were under way on a proposal to organise joint production of the Opel-Astra T3000 in Russia. He said GM subsidiary Adam Opel had proposed that the vehicles be produced using equipment that is to be eliminated from U.S. and European assembly lines by 2005.

Presipkinsky said initial plans called for production of about 150,000 vehicles with output gradually changing over to a Russian model. He said such a joint venture would require equal investments from GM and AvtoVAZ but that a decision on the deal could not be made until a business plan had been completed. "The financial viability of producing such a vehicle in Russia will be the deciding factor," Presipkinsky said.

AvtoVAZ and GM had previously planned kit assembly of Opel vehicles but the start of the crisis last August prompted both parties to rethink the deal, AvtoVAZ officials said. AvtoVAZ is Russia's largest carmaker, but last year saw company output fall from a planned 747,000 units to just 598,000 with 90,000 cars unsold by year's end. Company officials said that in 1999 AvtoVAZ had set its production target at 657,400 cars, including 118,000 for export. Its main marques are the Niva four-wheel drive and the Samara saloon car. “

This article has:

Tangibility ratio 1 = $47 / 1,253 = 3.75\%$

Tangibility ratio 2 = $8 / 268 = 2.99\%$

Article 3:

Time and date: 18:16, 01/22/1999

Source: Reuters News

Title: GM will introduce parking technology on 2000 DeVille.

“General Motors Corp. said on Friday that it will offer a new type of parking technology on its 2000 model-year Cadillac DeVille cars to help drivers avoid stray shopping carts or other parking hazards.

The ultrasonic rear park assist technology is designed to help drivers park their vehicles while in reverse, using both audio and visual cues that convey the closeness of objects behind the vehicle, GM said in a press release. The visual display uses three light-emitting diodes, working in concert with an audio chime system to alert the driver to potential hazards. It is the second new technology GM will offer on its next-generation full-size Cadillac sedan, following a thermal-imaging night-vision system. "Whereas Night Vision will help drivers see farther ahead than they ever could see with just their headlights, our new Ultrasonic Rear Parking Assist will allow them to 'see' potential obstacles behind them during parking manoeuvres, such as a sign post or a shopping cart," Cadillac general manager John F. Smith said. The parking technology, developed by German electrical engineering group Robert Bosch GmbH, uses four sensors on the car's rear fascia that send out ultrasonic waves when the car is in reverse. The sensors pick up the echo of a signal when it bounces off an object and determines distance to the object. The system only operates at up to three miles an hour.”

This article has:

Tangibility ratio 1 = $4 / 1,147 = 0.35\%$

Tangibility ratio 2 = $1 / 257 = 0.39\%$

Appendix IA.3. Short Selling Profitability and News

Appendix IA.3 reports the results from daily Fama–MacBeth (1973) regressions with Newey–West (1987) correction that examine how short selling profitability is affected by news coverage. It is designed to replicate the results by Engelberg, Reed, and Ringgenberg (2012) within our data set. The dependent variables are returns in the 20- and 30- trading day windows after the event. The explanatory variable of interest is the interaction between REL_SHORTING and NEWS_COVERAGE, which is a dummy variable equal to 1 if there was an article about the company on the day. Standard variable definitions appear in the tables of the paper. *t*-statistics are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively. The sample for this regression consists of news days from Jan. 1999 to Dec. 2008.

	Dependent Variables:			
	RETURN	MKT_ADJ_RET.	RETURN	MKT_ADJ_RET.
	<i>t</i> +1 to <i>t</i> +20	<i>t</i> +1 to <i>t</i> +20	<i>t</i> +1 to <i>t</i> +30	<i>t</i> +1 to <i>t</i> +30
	1	2	3	4
REL_SHORTING × NEWS_COVERAGE	-0.0086* (-1.81)	-0.0090* (-1.80)	-0.0098* (-2.35)	-0.0103** (-2.29)
REL_SHORTING	0.0040 (0.75)	0.0029 (0.59)	0.0132 (1.10)	0.0113 (1.04)
NEWS_COVERAGE	0.0005 (0.37)	0.0004 (0.29)	0.0007 (0.45)	0.0005 (0.29)
SIZE	-0.0139*** (-4.02)	-0.0141*** (-4.02)	-0.0226*** (-3.59)	-0.0227*** (-3.67)
MARKET_TO_BOOK	0.0005 (1.18)	0.0005 (1.14)	0.0006 (0.90)	0.0006 (0.87)
RETURN _{<i>t</i>-1}	-0.0638* (-1.71)	-0.0654* (-1.72)	-0.0928 (-1.52)	-0.0902 (-1.55)
RETURN _{<i>t</i>-2}	-0.0354 (-0.94)	-0.0355 (-0.94)	-0.0437 (-0.92)	-0.0436 (-0.95)
BREADTH_OF_OWNERSHIP	0.1118*** (3.06)	0.1157*** (3.09)	0.1660*** (2.85)	0.1744*** (2.80)
NUMBER_OF_ANALYSTS	0.0083* (1.72)	0.0086* (1.69)	0.0104 (1.53)	0.0108 (1.51)
ANALYST_DISPERSION	-0.0367 (-0.05)	-0.0057 (-0.01)	0.3226 (0.34)	0.3892 (0.42)
INST_OWNERSHIP	-0.0112 (-0.67)	-0.0122 (-0.71)	-0.0231 (-1.01)	-0.0245 (-1.05)
No. of obs.	465,144	465,144	465,114	465,114
Newey–West Lags	20	20	30	30

Appendix IA.4. Variable Definitions

Appendix IA.4 details the definitions of the main variables used in the analysis. All variables are specific to a company-day, unless explicitly stated differently. Company and date indices are omitted for brevity. All continuous variables are winsorized at the 1% threshold. Articles are assigned to the next trading day if they appear after 4 pm EST or on the weekend.

Variable Name	Definition
SIZE	Natural logarithm of stock market capitalization at the beginning of the quarter
MARKET_TO_BOOK	Market capitalization divided by the book value of equity at the beginning of the year
BREADTH_OF_OWNERSHIP	Number of institutions holding the stock at the beginning of the year divided by the total number of reporting institutions at that time
INST_OWNERSHIP	Percentage of shares held by institutions at the beginning of the year
NUMBER_OF_ANALYSTS	$\text{Ln}(1 + \text{number of analysts on IBES making an earnings forecasts for the stock at the beginning of the quarter})$
ANALYST_DISPERSION	$(\text{Standard deviation of analysts' earnings forecast})/(\text{stock price})$ at the beginning of the quarter (this variable is set to missing if there are fewer than 3 analysts covering the stock)
MKT_ADJ_RETURN	Stock return minus the return on the CRSP value-weighted index
NUMBER_OF_ARTICLES	$\text{Ln}(1 + \text{number of articles for the company-day or company-month})$
ARTICLE_SENTIMENT	$\text{Mean}_{\text{all articles on company } i \text{ on day } t} \left(-\frac{\text{number of negative words}}{\text{number of words}} \right)$
NEWS_COVERAGE	Dummy variable equal to 1 if there is a news article for the company on that day
INF_INTANG	$\text{Mean}_{\text{all articles on company } i \text{ on day } t} \left(1 - \frac{\text{number of numbers}}{\text{number of words}} \right) - \text{Median}_{\text{all articles in the year}} \left(1 - \frac{\text{number of numbers}}{\text{number of words}} \right)$
ABN_INF_INTANG	$\text{Ln} \left(\frac{\text{Mean}_{\text{all articles on company } i \text{ on day } t} \left(1 - \frac{\text{number of numbers}}{\text{number of words}} \right)}{\text{Mean}_{\text{all articles on company } i \text{ on day } t-125 \text{ to } t-1} \left(1 - \frac{\text{number of numbers}}{\text{number of words}} \right)} \right)$ (this variable is set to missing if there are fewer than 5 news days within the last 125 trading days)
AMIHUDD_ILLIQUIDITY	$10^3 \text{Ln} \left(1 + 10^6 \times \frac{ \text{return} }{\text{dollar volume}} \right)$ To calculate intraday Amihud illiquidity, we split the trading day into 78 5-minute intervals. For each 5-minute interval, we divide the absolute return by the dollar trading volume. We take the natural logarithm of the daily mean to compute INTRADAY_AMIHUDD_ILLIQUIDITY:
INTRADAY_AMIHUDD_ILLIQUIDITY	$\text{Ln} \left(1 + 10^6 \times \text{Mean}_{\text{over 5 min intervals}} \left(\frac{ \text{return}_t }{\text{dollar volume}_t} \right) \right)$
BID_ASK_SPREAD	$\text{Mean}_{\text{over 5 min intervals}} \left(\frac{\text{ask}_t - \text{bid}_t}{0.5 \times \text{ask}_t + 0.5 \times \text{bid}_t} \right)$
FRACTION_OF_QUALNEWS (FRACTION_OF_QUANTNEWS)	Ratio of the number of days with the above-median (below-median) intangibility score to the total number of trading days in the month
OLYMPIC_DUMMY	Dummy variable equal to 1 during the Olympic Games (opening to closing ceremony)
SHORTING	$(\text{Number of shares newly lent out})/(\text{number of shares outstanding})$
CLOSING	$(\text{Number of shares returned to lenders})/(\text{number of shares outstanding})$
SHORT_SALE_TURNOVER	SHORTING + CLOSING
TOTAL_TURNOVER	$(\text{Trading volume})/(\text{Shares outstanding})$
REL_SHORTING	SHORTING/TOTAL_TURNOVER
REL_CLOSING	CLOSING/TOTAL_TURNOVER
REL_SHORT_SALE_TURNOVER	REL_SHORTING + REL_CLOSING
ABN_REL_SHORT_SALE_TURNOVER	$\text{Ln} \left(\frac{\text{REL_SHORT_SALE_TURNOVER}}{\text{Mean}_{t-125, t-1}(\text{REL_SHORT_SALE_TURNOVER})} \right)$
DIFF_IN_ABN_TURNOVER	$\text{Ln} \left(\frac{\text{SHORT_SALE_TURNOVER}}{\text{Mean}_{t-125, t-1}(\text{SHORT_SALE_TURNOVER})} \right) - \text{Ln} \left(\frac{\text{TOTAL_TURNOVER}}{\text{Mean}_{t-125, t-1}(\text{TOTAL_TURNOVER})} \right)$
INF_INTANG_DIGIT	$\text{Mean}_{\text{all articles on company } i \text{ on day } t} \left(1 - \frac{\text{number of digits}}{\text{number of symbols}} \right) - \text{Median}_{\text{all articles in the year}} \left(1 - \frac{\text{number of digits}}{\text{number of symbols}} \right)$