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Research article

Deep learning-based multi-dimensional investor sentiment and stock liquidity: Evidence from China

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Supplementary

Appendix A. Robustness Test for the COVID-19 Pandemic Period

This appendix provides the detailed regression results for the robustness test discussed in Section 5, which examines the stability of our findings during the COVID-19 pandemic (2020–2023). To account for potential structural breaks induced by this period of extreme market stress, we re-estimated our baseline models on a subsample restricted to the SSE 50 constituents from January 2020 to January 2023.

The following tables correspond to the main analyses presented in the body of the paper. Table A1 reports the contemporaneous regression results. Table A2 details the effects of individual lagged sentiment variables, and Table A3 presents the cumulative dynamic effects.

Table A1. Immediate Effects of Sentiment on SSE 50 Liquidity: The COVID-19 Period Subsample (2020–2023).

LIQ	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Aggregate	Policy	Psychological	Social	Climate	Technology	Company	BSI	MS
Sentiment	0.018	0.198***	0.175***	0.224***	0.022	0.195	0.085**	0.095	0.045**
	(1.15)	(3.11)	(3.31)	(2.75)	(0.28)	(1.15)	(2.41)	(1.55)	(2.15)
Attention	0.085***	−0.091**	0.115***	−0.055	0.015	0.021	−0.048*	0.071*	0.088***
	(3.15)	(−2.18)	(3.55)	(−1.51)	(0.35)	(0.51)	(−1.85)	(1.81)	(3.51)
Beta	0.027***	0.026***	0.031***	0.027***	0.027***	0.026***	0.030***	0.030***	0.027***
	(3.85)	(3.80)	(4.28)	(4.01)	(3.78)	(3.65)	(4.21)	(4.18)	(3.81)
Market Value	1.528***	1.533***	1.524***	1.527***	1.531***	1.530***	1.526***	1.525***	1.528***
	(26.31)	(26.42)	(26.25)	(26.30)	(26.38)	(26.35)	(26.28)	(26.27)	(26.33)
BM	0.008	0.007	0.012	0.010	0.008	0.006	0.012	0.008	0.007
	(0.45)	(0.38)	(0.65)	(0.55)	(0.43)	(0.35)	(0.68)	(0.48)	(0.41)
Turnover	0.265***	0.264***	0.265***	0.268***	0.266***	0.266***	0.268***	0.264***	0.265***
Rate	(14.85)	(14.88)	(14.91)	(15.05)	(15.01)	(14.98)	(15.03)	(14.91)	(14.92)
Constant	−35.95***	−36.05***	−35.81***	−35.98***	−35.99***	−35.91***	−36.15***	−35.88***	−35.91***
	(−21.65)	(−21.75)	(−21.58)	(−21.69)	(−21.70)	(−21.63)	(−21.78)	(−21.63)	(−21.65)
Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES
Stock FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	33,474	33,474	33,474	33,474	33,474	33,474	33,474	33,474	33,474
R^2	0.048	0.049	0.051	0.049	0.048	0.048	0.049	0.048	0.048

Notes: t statistics are in parentheses; ***, **, and * denote significance at the 0.01, 0.05, and 0.1 level respectively.

Table A2. Individual Lagged Effects of Sentiment on SSE 50 Liquidity: The COVID−19 Period Subsample (2020–2023).

Lag(Days)	Aggregate Sentiment	Policy Sentiment	Psychological Sentiment	Social Sentiment	Climate Sentiment	Technology Sentiment	Company Sentiment	Baidu Search Index	Market Sentiment
Lag 1	0.048***	0.191***	0.275***	0.055	0.081	0.185	0.088**	0.035*	0.075
	(2.81)	(2.85)	(4.55)	(0.58)	(0.85)	(0.95)	(2.05)	(1.75)	(1.51)
Lag 2	0.045**	0.215***	0.045	0.271**	0.078	−0.255	0.128***	0.021	0.095
	(2.15)	(2.55)	(0.65)	(2.51)	(0.71)	(−1.15)	(2.55)	(1.01)	(2.25)
Lag 3	0.040*	0.188**	0.125*	0.241**	0.048	0.181	−0.041	0.015	0.065*
	(1.91)	(2.21)	(1.81)	(2.15)	(0.45)	(0.81)	(−0.88)	(0.71)	(1.75)
Lag 4	0.051**	0.135*	0.081	−0.165	0.225**	−0.185	0.011	0.005	0.035
	(2.45)	(1.68)	(1.15)	(−1.55)	(2.01)	(−0.78)	(0.25)	(0.25)	(1.15)
Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES
Stock FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Groups	50	50	50	50	50	50	50	50	50
R^2 Range	0.04–0.05	0.04–0.05	0.04–0.05	0.04–0.05	0.04–0.05	0.04–0.05	0.04–0.05	0.04–0.05	0.04–0.05

Notes: t statistics are in parentheses; ***, **, and * denote significance at the 0.01, 0.05, and 0.1 level respectively.

Table A3. Cumulative Dynamic Effects of Sentiment on SSE 50 Liquidity: The COVID-19 Period Subsample (2020–2023).

LIQ	(1)	(2)	(3)	(4)	(5)
	Lag 0	Lag 0–1	Lag 0–2	Lag 0–3	Lag 0–4
Aggregate $Sentiment_t$	0.018	0.015	0.018	−0.025	−0.011
	(1.15)	(0.81)	(0.85)	(−0.95)	(−0.28)
Aggregate $Sentiment_{t-1}$		0.047***	0.028	0.055**	0.075*
		(2.71)	(1.31)	(2.11)	(1.95)
Aggregate $Sentiment_{t-2}$			0.038*	0.018	−0.005
			(1.78)	(0.65)	(−0.13)
Aggregate $Sentiment_{t-3}$				0.025	0.005
				(0.95)	(0.15)
Aggregate $Sentiment_{t-4}$					0.035
					(0.91)
Policy $Sentiment_t$	0.198***	0.175**	0.141	0.275**	0.185
	(3.11)	(2.11)	(1.45)	(2.35)	(1.05)
Policy $Sentiment_{t-1}$		0.128*	0.065	−0.048	0.275
		(1.61)	(0.65)	(−0.38)	(1.45)
Policy $Sentiment_{t-2}$			0.155	0.271**	0.231
			(1.61)	(2.08)	(1.18)
Policy $Sentiment_{t-3}$				0.138	−0.205
				(1.18)	(−1.01)
Policy $Sentiment_{t-4}$					0.138
					(0.85)
Psychological $Sentiment_t$	0.175***	0.115*	0.068	0.125	−0.018
	(3.31)	(1.68)	(0.78)	(1.18)	(−0.13)
Psychological $Sentiment_{t-1}$		0.228***	0.281***	0.148	0.461**
		(3.35)	(3.21)	(1.31)	(2.58)
Psychological $Sentiment_{t-2}$			−0.105	−0.101	−0.018
			(−1.35)	(−0.95)	(−0.11)
Psychological $Sentiment_{t-3}$				0.071	−0.175
				(0.71)	(−1.15)
Psychological $Sentiment_{t-4}$					0.138
					(1.05)
Social $Sentiment_t$	0.224***	0.281***	0.148	0.231	0.211
	(2.75)	(2.91)	(1.35)	(1.61)	(1.05)
Social $Sentiment_{t-1}$		0.028	−0.015	−0.051	−0.141
		(0.28)	(−0.13)	(−0.38)	(−0.65)
Social $Sentiment_{t-2}$			0.251**	0.181	0.365*
			(2.25)	(1.28)	(1.95)
Social $Sentiment_{t-3}$				0.271*	0.021
				(1.91)	(0.08)
Social $Sentiment_{t-4}$					−0.248
					(−1.28)
Climate $Sentiment_t$	0.022	−0.015	−0.028	−0.095	−0.265

	(0.28)	(−0.15)	(−0.24)	(−0.65)	(−1.25)
Climate Sentiment$_{t-1}$		0.081	0.128	0.058	0.245
		(0.81)	(1.15)	(0.41)	(1.21)
Climate Sentiment$_{t-2}$			0.068	0.101	−0.025
			(0.61)	(0.75)	(−0.12)
Climate Sentiment$_{t-3}$				0.108	0.051
				(0.81)	(0.27)
Climate Sentiment$_{t-4}$					0.588***
					(2.81)
Technology Sentiment$_t$	0.195	0.171	0.105	0.011	−0.225
	(1.15)	(0.85)	(0.43)	(0.03)	(−0.51)
Technology Sentiment$_{t-1}$		0.158	0.205	0.335	0.861*
		(0.81)	(0.85)	(1.11)	(1.78)
Technology Sentiment$_{t-2}$			−0.311	−0.188	−0.068
			(−1.38)	(−0.65)	(−0.16)
Technology Sentiment$_{t-3}$				−0.011	0.125
				(−0.03)	(0.31)
Technology Sentiment$_{t-4}$					0.071
					(0.18)
Company Sentiment$_t$	0.085**	0.105**	0.048	0.038	−0.071
	(2.41)	(2.11)	(0.78)	(0.51)	(−0.78)
Company Sentiment$_{t-1}$		0.038	0.098	0.005	0.215
		(0.78)	(1.41)	(0.05)	(1.61)
Company Sentiment$_{t-2}$			0.061	0.091	0.018
			(1.05)	(0.95)	(0.11)
Company Sentiment$_{t-3}$				−0.038	−0.088
				(−0.51)	(−0.65)
Company Sentiment$_{t-4}$					−0.045
					(−0.35)
Baidu Search Index$_t$	0.045**	0.041*	0.038	0.035	0.031
	(2.15)	(1.91)	(1.55)	(1.35)	(1.15)
Baidu Search Index$_{t-1}$		0.038*	0.031	0.028	0.025
		(1.78)	(1.45)	(1.21)	(1.11)
Baidu Search Index$_{t-2}$			0.025	0.021	0.018
			(1.11)	(0.95)	(0.85)
Baidu Search Index$_{t-3}$				0.018	0.015
				(0.85)	(0.71)
Baidu Search Index$_{t-4}$					0.011
					(0.55)
Market Sentiment$_t$	0.095	0.088	0.075	0.071	0.068
	(1.55)	(1.41)	(1.21)	(1.15)	(1.11)
Market Sentiment$_{t-1}$		0.078	0.065	0.061	0.058
		(1.55)	(1.28)	(1.21)	(1.15)
Market Sentiment$_{t-2}$			0.098	0.085	0.081

			(2.28)	(1.95)	(1.88)*
Market Sentiment$_{t-3}$				0.068	0.065
				(1.78)*	(1.61)
Market Sentiment$_{t-4}$					0.038
					(1.21)
Controls	YES	YES	YES	YES	YES
Stock FE	YES	YES	YES	YES	YES
Observations	33,474	26,396	19,378	12,654	6,136
R^2 Range	0.04–0.05	0.04–0.05	0.04–0.05	0.04–0.05	0.04–0.05

Notes: t statistics are in parentheses; ***, **, and * denote significance at the 0.01, 0.05, and 0.1 level respectively.

Appendix B. Robustness Test Using an Alternative Liquidity Proxy

This appendix provides the detailed results for the robustness test discussed in Section 5, which verifies that our findings are not contingent on the specific proxy chosen for liquidity. For this test, we replaced our primary liquidity measure with a well-established alternative: stock-level market depth (Depth). We re-ran our entire set of panel regressions using this alternative proxy for both the SSE 50 and STAR 50 samples.

The tables are structured as follows: Tables B1 through B3 present the results for the SSE 50 index, detailing the immediate, individual lagged, and cumulative dynamic effects of investor sentiment on market depth, respectively; and following the same sequence, Tables B4 through B6 present the corresponding results for the STAR 50 index.

Table B1. Immediate Effects of Sentiment on SSE 50 Market Depth.

Depth	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Aggregate	Policy	Psychological	Social	Climate	Technology	Company	BSI	MS
Sentiment	0.009	0.155**	0.235***	0.281***	−0.005	0.088	0.068***	0.031	0.140***
	(0.85)	(2.51)	(7.55)	(5.15)	(−0.08)	(0.71)	(2.95)	(1.41)	(3.11)
Attention	0.115***	–0.118***	0.096***	–0.049*	–0.031	0.005	–0.030***	–0.012***	0.081***
	(12.98)	(–5.76)	(6.21)	(−1.88)	(−1.51)	(0.21)	(–3.68)	(–2.71)	(5.42)
Beta	0.059	0.071*	0.048	0.055	0.075*	0.061	0.077*	0.073*	0.070*
	(1.45)	(1.79)	(1.15)	(1.38)	(1.85)	(1.51)	(1.91)	(1.81)	(1.75)
Market Value	1.152***	1.160***	1.148***	1.171***	1.182***	1.188***	1.165***	1.185***	1.173***
	(48.11)	(48.55)	(47.95)	(49.01)	(49.53)	(49.88)	(48.71)	(49.77)	(49.15)
BM	−0.005	0.011	0.006	0.002	0.004	−0.004	0.012	−0.004	0.008
	(−0.51)	(1.35)	(0.75)	(0.25)	(0.43)	(−0.38)	(1.48)	(−0.41)	(0.99)
Turnover	0.215***	0.263***	0.255***	0.268***	0.270***	0.271***	0.266***	0.272***	0.269***
Rate	(23.88)	(31.05)	(29.11)	(31.89)	(32.15)	(32.33)	(31.55)	(32.48)	(31.99)
Constant	−23.11***	−22.95***	−22.68***	−23.05***	−23.41***	−23.55***	−22.99***	−23.51***	−23.22***
	(−37.85)	(−37.51)	(−37.01)	(−37.69)	(−38.11)	(−38.51)	(−37.60)	(−38.45)	(−37.95)
Stock FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Groups	50	50	50	50	50	50	50	50	50
Observations	64,133	64,133	64,133	64,133	64,133	64,133	64,133	64,133	64,133
R^2	0.058	0.061	0.062	0.061	0.060	0.060	0.061	0.058	0.061

Notes: t statistics are in parentheses; ***, **, and * denote significance at the 0.01, 0.05, and 0.1 level respectively.

Table B2. Individual Lagged Effects of Sentiment on SSE 50 Market Depth.

Lag(Days)	Aggregate Sentiment	Policy Sentiment	Psychological Sentiment	Social Sentiment	Climate Sentiment	Technology Sentiment	Company Sentiment	Baidu Search Index	Market Sentiment
Lag 1	0.045**	0.215***	0.170**	0.185***	0.225***	–0.095	0.081*	0.015	0.095***
	(2.41)	(5.11)	(2.55)	(4.45)	(3.71)	(−0.88)	(1.71)	(0.75)	(2.91)
Lag 2	0.038**	0.177***	0.185***	0.230***	0.180**	–0.055	0.055	0.008	0.062**
	(2.15)	(4.15)	(4.01)	(4.65)	(2.58)	(−0.48)	(1.21)	(0.41)	(2.11)
Lag 3	0.025*	0.145***	0.201***	0.041	0.145**	0.075	0.078*	–0.009	0.031
	(1.75)	(3.81)	(4.55)	(0.92)	(2.25)	(0.71)	(1.65)	(−0.45)	(1.15)
Lag 4	0.015	0.029	0.135***	0.022	0.085	0.051	0.062	0.011	0.005
	(1.28)	(0.65)	(3.88)	(0.41)	(1.38)	(0.44)	(1.31)	(0.55)	(0.19)
Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES
Stock FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Groups	50	50	50	50	50	50	50	50	50
R^2	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06

Notes: t statistics are in parentheses; ***, **, and * denote significance at the 0.01, 0.05, and 0.1 level respectively.

Table B3. Cumulative Dynamic Effects of Sentiment on SSE 50 Market Depth.

Depth	(1)	(2)	(3)	(4)	(5)
	Lag 0	Lag 0–1	Lag 0–2	Lag 0–3	Lag 0–4
Aggregate Sentiment_t	0.009	0.002	0.004	0.005	0.006
	(0.85)	(0.18)	(0.35)	(0.41)	(0.49)
Aggregate Sentiment_{t-1}		0.045**	0.038*	0.035*	0.036*
		(2.21)	(1.85)	(1.76)	(1.78)
Aggregate Sentiment_{t-2}			0.015	0.011	0.010
			(1.18)	(0.85)	(0.79)
Aggregate Sentiment_{t-3}				0.028*	0.025
				(1.70)	(1.51)
Aggregate Sentiment_{t-4}					–0.005
					(−0.45)
Policy Sentiment_t	0.155**	0.155***	0.160***	0.125**	0.128**
	(2.51)	(3.41)	(3.51)	(2.55)	(2.58)
Policy Sentiment_{t-1}		0.148***	0.110**	0.112**	0.115**
		(3.75)	(2.45)	(2.48)	(2.51)
Policy Sentiment_{t-2}			0.085	0.091*	0.095*
			(1.61)	(1.81)	(1.85)
Policy Sentiment_{t-3}				0.135***	0.105**
				(3.01)	(2.28)
Policy Sentiment_{t-4}					0.065
					(1.41)
Psychological Sentiment_t	0.235***	0.115**	0.108**	0.112**	0.110**
	(7.55)	(2.45)	(2.25)	(2.31)	(2.27)

Psychological Sentiment$_{t-1}$		0.211*** (5.85)	0.225*** (6.11)	0.195*** (5.15)	0.198*** (5.21)
Psychological Sentiment$_{t-2}$			–0.005 (−0.13)	0.085** (2.41)	0.081** (2.35)
Psychological Sentiment$_{t-3}$				–0.045 (−1.15)	0.035 (1.11)
Psychological Sentiment$_{t-4}$					–0.095** (−2.18)
Social Sentiment$_{t}$	0.281*** (5.15)	0.235*** (4.15)	0.241*** (4.25)	0.245*** (4.31)	0.251*** (4.45)
Social Sentiment$_{t-1}$		0.165*** (3.95)	0.155*** (3.75)	0.162*** (3.81)	0.158*** (3.71)
Social Sentiment$_{t-2}$			0.180*** (3.81)	0.184*** (3.85)	0.175*** (3.75)
Social Sentiment$_{t-3}$				0.005 (0.11)	0.001 (0.02)
Social Sentiment$_{t-4}$					–0.065* (−1.88)
Climate Sentiment$_{t}$	−0.005 (−0.08)	0.055 (1.01)	0.048 (0.85)	0.035 (0.61)	0.031 (0.55)
Climate Sentiment$_{t-1}$		0.185*** (3.11)	0.170*** (2.85)	0.145** (2.35)	0.138** (2.25)
Climate Sentiment$_{t-2}$			0.095 (1.55)	0.081 (1.35)	0.075 (1.25)
Climate Sentiment$_{t-3}$				0.066 (1.05)	0.051 (0.81)
Climate Sentiment$_{t-4}$					0.145** (2.15)
Technology Sentiment$_{t}$	0.088 (0.71)	0.065 (0.51)	0.058 (0.45)	0.051 (0.41)	0.048 (0.38)
Technology Sentiment$_{t-1}$		–0.085 (−0.78)	–0.081 (−0.75)	–0.088 (−0.81)	–0.089 (−0.82)
Technology Sentiment$_{t-2}$			0.055 (0.48)	0.048 (0.41)	0.041 (0.35)
Technology Sentiment$_{t-3}$				0.095* (1.81)	0.088* (1.75)
Technology Sentiment$_{t-4}$					0.075 (0.65)
Company Sentiment$_{t}$	0.068*** (2.95)	0.075* (1.85)	0.065 (1.55)	0.058 (1.35)	0.045 (1.05)
Company Sentiment$_{t-1}$		0.055 (1.41)	0.041 (1.21)	0.031 (0.95)	0.035 (1.01)
Company Sentiment$_{t-2}$			0.025 (0.91)	0.031 (1.11)	0.028 (1.01)

Company Sentiment$_{t-3}$				–0.005	–0.002
				(−0.15)	(−0.06)
Company Sentiment$_{t-4}$					0.085**
					(2.05)
Baidu Search Index$_{t}$	0.031	0.018	0.019	0.021	0.020
	(1.41)	(0.85)	(0.91)	(1.01)	(0.95)
Baidu Search Index$_{t-1}$		0.025	0.021	0.023	0.024
		(1.25)	(1.05)	(1.11)	(1.15)
Baidu Search Index$_{t-2}$			0.005	0.008	0.009
			(0.25)	(0.41)	(0.45)
Baidu Search Index$_{t-3}$				–0.015	–0.018
				(−0.75)	(−0.88)
Baidu Search Index$_{t-4}$					0.025*
					(1.68)
Market Sentiment$_{t}$	0.140***	0.105**	0.101**	0.103**	0.105**
	(3.11)	(2.45)	(2.35)	(2.38)	(2.41)
Market Sentiment$_{t-1}$		0.075*	0.068	0.071*	0.069*
		(1.85)	(1.61)	(1.71)	(1.68)
Market Sentiment$_{t-2}$			0.055	0.048	0.045
			(1.51)	(1.31)	(1.25)
Market Sentiment$_{t-3}$				0.015	0.018
				(0.55)	(0.65)
Market Sentiment$_{t-4}$					0.005
					(0.18)
Controls	YES	YES	YES	YES	YES
Stock FE	YES	YES	YES	YES	YES
Observations	64,133	50,480	37,007	24,022	11,577
R^2 Range	0.06	0.06	0.06	0.06	0.06

Notes: t statistics are in parentheses; ***, **, and * denote significance at the 0.01, 0.05, and 0.1 level respectively.

Table B4. Immediate Effects of Sentiment on STAR 50 Market Depth.

Depth	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Aggregate	Policy	Psychological	Social	Climate	Technology	Company	BSI	MS
Sentiment	0.041**	0.105**	0.145***	0.128**	–0.065	0.185***	0.192***	0.038	0.115***
	(2.15)	(2.31)	(2.95)	(2.48)	(–1.05)	(3.11)	(5.15)	(1.85)	(2.65)
Attention	–0.005	–0.009	0.015	–0.075*	–0.018	–0.003	0.002	0.012	–0.019
	(–0.28)	(–0.18)	(0.51)	(–1.68)	(–0.51)	(–0.15)	(0.05)	(0.25)	(–0.41)
Beta	0.485***	0.490***	0.471***	0.488***	0.495***	0.535***	0.528***	0.499***	0.491***
	(3.85)	(3.88)	(3.71)	(3.86)	(3.91)	(4.21)	(4.15)	(3.93)	(3.89)
Market Value	0.688***	0.695***	0.685***	0.710***	0.690***	0.675***	0.681***	0.685***	0.688***
	(19.55)	(19.11)	(18.85)	(19.25)	(19.15)	(18.01)	(18.35)	(19.51)	(18.95)
BM	–0.355***	–0.351***	–0.361***	–0.365***	–0.353***	–0.345***	–0.350***	–0.354***	–0.358***
	(–32.85)	(–31.95)	(–28.95)	(–32.11)	(–32.55)	(–28.55)	(–28.85)	(–32.75)	(–29.15)
Turnover Rate	0.615***	0.621***	0.585***	0.655***	0.625***	0.618***	0.581***	0.618***	0.589***
	(8.11)	(8.15)	(7.35)	(8.55)	(8.18)	(8.05)	(7.45)	(8.13)	(7.48)
Constant	7.155***	7.115***	7.455***	7.285***	7.188***	7.055***	7.215***	7.145***	7.415***
	(121.55)	(105.85)	(60.15)	(115.88)	(131.95)	(88.95)	(63.85)	(118.95)	(61.55)
Stock FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Groups	50	50	50	50	50	50	50	50	50
Observations	27,525	27,525	27,525	27,525	27,525	27,525	27,525	27,525	27,525
R^2	0.181	0.182	0.183	0.183	0.182	0.182	0.183	0.181	0.182

Notes: t statistics are in parentheses; ***, **, and * denote significance at the 0.01, 0.05, and 0.1 level respectively.

Table B5. Individual Lagged Effects of Sentiment on STAR 50 Market Depth.

Lag(Days)	Aggregate Sentiment	Policy Sentiment	Psychological Sentiment	Social Sentiment	Climate Sentiment	Technology Sentiment	Company Sentiment	Baidu Search Index	Market Sentiment
Lag 1	0.031*	0.045	0.081	–0.055	0.015	0.145***	0.211***	0.028	0.075
	(1.85)	(1.05)	(1.01)	(–1.51)	(0.21)	(2.85)	(5.11)	(1.31)	(1.55)
Lag 2	0.025	0.055*	0.065	–0.088**	–0.075*	0.177***	0.158***	0.005	0.077*
	(1.51)	(1.68)	(0.81)	(–2.11)	(–1.85)	(2.95)	(4.15)	(0.21)	(1.75)
Lag 3	–0.005	0.015	0.035	–0.075*	–0.051	0.205***	0.125***	–0.011	0.051
	(–0.35)	(0.41)	(0.51)	(–1.81)	(–0.65)	(3.15)	(3.25)	(–0.51)	(1.05)
Lag 4	–0.011	–0.015	0.075	–0.155***	0.011	0.085*	0.145***	0.001	0.025
	(–0.65)	(–0.31)	(1.05)	(–5.15)	(0.18)	(1.71)	(4.05)	(0.04)	(0.51)
Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES
Stock FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Groups	50	50	50	50	50	50	50	50	50
R^2	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18

Notes: t statistics are in parentheses; ***, **, and * denote significance at the 0.01, 0.05, and 0.1 level respectively.

Table B6. Cumulative Dynamic Effects of Sentiment on STAR 50 Market Depth.

Depth	(1)	(2)	(3)	(4)	(5)
	Lag 0	Lag 0–1	Lag 0–2	Lag 0–3	Lag 0–4
Aggregate Sentiment$_t$	0.041**	0.038*	0.035	0.025	0.023
	(2.15)	(1.81)	(1.61)	(1.21)	(1.11)
Aggregate Sentiment$_{t-1}$		0.033	0.030	0.028	0.025
		(1.45)	(1.28)	(1.18)	(1.11)
Aggregate Sentiment$_{t-2}$			0.015	0.013	0.011
			(0.65)	(0.58)	(0.51)
Aggregate Sentiment$_{t-3}$				–0.002	–0.005
				(–0.08)	(–0.21)
Aggregate Sentiment$_{t-4}$					–0.015
					(–0.28)
Policy Sentiment$_t$	0.105**	0.095*	0.099*	0.088	0.085
	(2.31)	(1.85)	(1.91)	(1.65)	(1.61)
Policy Sentiment$_{t-1}$		0.051	0.050	0.052	0.050
		(1.18)	(1.15)	(1.19)	(1.15)
Policy Sentiment$_{t-2}$			0.061*	0.058	0.055
			(1.75)	(1.55)	(1.48)
Policy Sentiment$_{t-3}$				–0.025	–0.028
				(–0.71)	(–0.78)
Policy Sentiment$_{t-4}$					–0.018
					(–0.38)
Psychological Sentiment$_t$	0.145**	0.138**	0.131**	0.128**	0.125**
	(2.95)	(2.25)	(2.15)	(2.11)	(2.08)
Psychological Sentiment$_{t-1}$		0.065	0.061	0.058	0.060
		(0.88)	(0.95)	(0.98)	(1.01)
Psychological Sentiment$_{t-2}$			0.025	0.015	0.018
			(0.41)	(0.25)	(0.28)
Psychological Sentiment$_{t-3}$				0.045	0.051
				(0.85)	(1.01)
Psychological Sentiment$_{t-4}$					–0.035
					(–0.58)
Social Sentiment$_t$	0.128**	0.135***	0.141***	0.148***	0.151***
	(2.48)	(3.25)	(3.35)	(3.45)	(3.55)
Social Sentiment$_{t-1}$		–0.095**	–0.088**	–0.065*	–0.068*
		(–2.41)	(–2.15)	(–1.71)	(–1.75)
Social Sentiment$_{t-2}$			–0.091**	–0.055	–0.058
			(–2.25)	(–1.45)	(–1.51)
Social Sentiment$_{t-3}$				–0.145***	–0.148***
				(–5.15)	(–5.21)
Social Sentiment$_{t-4}$					0.025
					(0.65)
Climate Sentiment$_t$	–0.065	–0.068	–0.065	–0.078	–0.071

	(–1.05)	(–1.08)	(–1.05)	(–1.28)	(–1.18)
Climate Sentiment$_{t-1}$		0.021	0.015	0.018	0.020
		(0.41)	(0.28)	(0.33)	(0.36)
Climate Sentiment$_{t-2}$			–0.081*	–0.085*	–0.088**
			(–1.88)	(–1.91)	(–1.98)
Climate Sentiment$_{t-3}$				–0.055	–0.053
				(–0.68)	(–0.65)
Climate Sentiment$_{t-4}$					–0.095*
					(–1.81)
Technology Sentiment$_t$	0.185***	0.165**	0.148**	0.145**	0.135*
	(3.11)	(2.55)	(2.25)	(2.21)	(1.95)
Technology Sentiment$_{t-1}$		0.125**	0.105*	0.088	0.078
		(1.98)	(1.75)	(1.55)	(1.45)
Technology Sentiment$_{t-2}$			0.188***	0.165**	0.145**
			(2.85)	(2.45)	(2.21)
Technology Sentiment$_{t-3}$				0.155**	0.135**
				(2.25)	(2.05)
Technology Sentiment$_{t-4}$					0.045
					(1.01)
Company Sentiment$_t$	0.192***	0.155***	0.151***	0.145***	0.141***
	(5.15)	(4.15)	(4.01)	(3.85)	(3.75)
Company Sentiment$_{t-1}$		0.185***	0.165***	0.158***	0.155***
		(4.85)	(4.11)	(3.95)	(3.88)
Company Sentiment$_{t-2}$			0.055	0.041	0.038
			(1.71)	(1.35)	(1.28)
Company Sentiment$_{t-3}$				0.065**	0.055*
				(2.11)	(1.81)
Company Sentiment$_{t-4}$					0.041
					(1.35)
Baidu Search Index$_t$	0.038	0.035	0.038	0.025	0.028
	(1.85)	(1.55)	(1.45)	(1.25)	(1.31)
Baidu Search Index$_{t-1}$		0.031	0.028	0.025	0.023
		(1.25)	(1.15)	(1.05)	(1.01)
Baidu Search Index$_{t-2}$			0.025	0.023	0.021
			(1.08)	(1.01)	(0.95)
Baidu Search Index$_{t-3}$				0.015	0.013
				(0.68)	(0.61)
Baidu Search Index$_{t-4}$					0.011
					(0.55)
Market Sentiment$_t$	0.115***	0.105**	0.095**	0.085*	0.091*
	(2.65)	(2.21)	(2.05)	(1.91)	(1.95)
Market Sentiment$_{t-1}$		0.055	0.048	0.045	0.051
		(1.61)	(1.51)	(1.45)	(1.55)
Market Sentiment$_{t-2}$			0.038	0.041	0.038

			(1.31)	(1.38)	(1.35)
Market Sentiment$_{t-3}$				0.025	0.023
				(1.05)	(0.98)
Market Sentiment$_{t-4}$					0.018
					(0.81)
Controls	YES	YES	YES	YES	YES
Stock FE	YES	YES	YES	YES	YES
Observations	27,525	14,335	7,469	3,848	1,825
R^2 Range	0.16–0.18	0.16–0.18	0.16–0.18	0.16–0.18	0.16–0.18

Notes: t statistics are in parentheses; ***, **, and * denote significance at the 0.01, 0.05, and 0.1 level respectively.