

Supplementary material

“Earnings Autocorrelation and the Post-Earnings-Announcement Drift – Experimental Evidence”

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Note

The experimental data and analysis scripts can be downloaded from <https://doi.org/10.5281/zenodo.7844453>.

A. Discussion of experimental design

A reviewer observed that instead of two tradeable stocks, a design with only one tradeable stock, but retaining the perfectly negative correlation with a second, non-tradeable stock, would have been a valid alternative experimental design. The authors agree that this would have been an elegant alternative and would thus like to discuss its merits and demerits in the hope that such a discussion will help other researchers in their design choices.

One upside of the suggested design with one tradeable and one non-tradeable stock is that it would allow researchers to formulate even clearer portfolio predictions. Theory would predict that those participants that are endowed with nine shares of the tradeable stock should sell their entire share endowment to the participants endowed with nine shares of the non-tradeable stock. In equilibrium, one set of traders would then hold nine shares of both types of stock and the other set of traders would hold no shares. Due to the perfectly negative correlation of these stocks' earnings changes, both sets of traders would ultimately hold risk-free portfolios. A second upside would be that this alternative design would rule out the occurrence of arbitrage opportunities of the type we addressed in our robustness check treatment ARBI.

One downside to this design is that it would have required twice as many sessions and thus twice as many participants to reach the same number of observations. A second downside of allowing participants to trade only one stock and of expecting one group to only buy and the other to only sell is the reduced external validity. Investors, even retail investors, can and do typically engage in both buying and selling in equity markets. Furthermore, traders are typically not barred from selling a stock that they own. We deliberately chose to frame our experiment using the terms 'stock', 'earnings', 'firm', etc., to give participants a minimum of context to help them interpret our instructions in terms of a financial market background, and to give us an optimal environment for the Post-Earnings-Announcement

Drift to manifest despite our controlled laboratory setting. Using only one stock and barring one group of traders from selling their share endowment might have affected the degree to which our design mirrored the situation in markets outside of our lab and we know from other experimental market studies that context is very important for participant understanding and to rule out confusion that has been shown to affect outcomes (see, e.g., the Smith et al., 1988, evidence on bubbles in experimental asset markets and the attenuating effects of the ‘depletable goldmine’ framing of Kirchler et al., 2012).

To conclude, we argue that both designs have relative strengths that we hope future researchers will be able to use to find the optimal design for their own research questions.

B. Robustness checks

B.1. Earnings randomization

During the experiment, the computer drew the earnings changes randomly and independently across sessions according to the process described in Section III.B. of the main paper. Table SM.1 documents that the observed frequency of switches in the sign of consecutive earnings changes stays within the 95% confidence interval of the theoretical distribution.

Table SM.1: **Distribution of change in sign of earnings changes.** This table presents statistics regarding the probability of earnings changes switching between the two states in the three treatments.

Treatment	n	Predicted probability	Observed frequency	Confidence interval
BASE	200	.5	.575	(.498, .652)
CORR	200	.25	.250	(.182, .318)
ARBI	180	.25	.326	(.249, .404)

Table SM.2: **Post-earnings-announcement drift with 5s windows.** Mean taler gains based on quote midpoints from the end of the announcement window until the end of the phase.

	Treatments				CORR Treatment ^a		
	All	BASE	CORR	Δ	No Surprise	Surprise	Δ
Long	6.25*** (10.58)	3.97*** (9.44)	8.35*** (8.01)	4.38*** (3.90)	4.97*** (4.79)	18.44*** (9.41)	13.46*** (6.07)
Short	-9.34*** (-15.22)	-5.37*** (-10.81)	-13.53*** (-13.02)	-8.16*** (-7.08)	-10.50*** (-10.79)	-19.81*** (-5.79)	-9.32* (-2.62)
Long-Short	15.49*** (17.15)	9.23*** (13.40)	21.88*** (14.50)	12.66*** (7.63)	15.61*** (10.65)	36.99*** (8.34)	21.39*** (4.58)

*** $p < 0.005$, ** $p < 0.01$, * $p < 0.05$ (two-tailed t -test)

Note: Values based on all phases where both the first and the last 5s windows following an announcement (windows 0 and 35) have both a bid and an ask, thus permitting us to calculate quote midpoints (includes 95 percent, 91.2 percent, and 89.7 percent of Long, Short, and Long-Short phases, respectively).

^a CORR treatment data separated by the surprise variable excludes the phase following the first announcement (Phase 1).

B.2. PEAD at different window lengths

To study the PEAD in Table 3 of the paper, we split our trading phases into 18 windows of 10s each. The first of these windows, the “announcement window” is the time which we allow traders for incorporating the new information from the announcement into the price. As a robustness check, we repeat our analysis reported in the paper using 5s (Table SM.2) and 15s windows (Table SM.3). The results remain qualitatively unchanged.

Table SM.3: **Post-earnings-announcement drift with 15s windows.** Mean taler gains based on quote midpoints from the end of the announcement window until the end of the phase.

	Treatments				CORR Treatment ^a		
	All	BASE	CORR	Δ	No Surprise	Surprise	Δ
Long	2.32*** (3.24)	1.35 (1.38)	3.29*** (3.16)	1.94 (1.36)	1.36 (0.91)	7.11*** (3.43)	5.75* (2.25)
Short	-6.47*** (-11.91)	-3.44*** (-6.54)	-9.74*** (-10.91)	-6.30*** (-6.08)	-8.05*** (-7.51)	-14.18*** (-7.58)	-6.13** (-2.85)
Long-Short	9.21*** (10.67)	5.76*** (7.82)	13.03*** (8.36)	7.27*** (4.22)	8.85*** (4.16)	22.11*** (6.38)	13.27*** (3.26)

*** $p < 0.005$, ** $p < 0.01$, * $p < 0.05$ (two-tailed t -test)

Note: Values based on all phases where both the first and the last 15s windows following an announcement (windows 0 and 11) have both a bid and an ask, thus permitting us to calculate quote midpoints (includes 94.7 percent, 83.8 percent, and 80.9 percent of Long, Short, and Long-Short phases, respectively).

^a CORR treatment data separated by the surprise variable excludes the phase following the first announcement (Phase 1).

B.3. PEAD regression variations

In our regression analysis of PEAD returns we use window-to-window price changes in talers. We also performed three robustness checks with different specifications. First, in Table SM.4, instead of taler price changes we use log returns over consecutive windows. Second, in Table SM.5, instead of window-to-window price changes, we use the entire PEAD (taler price change) starting from the end of the announcement window and ending at the end of the phase. Third, in Table SM.6, we include period \times phase \times window fixed effects in our regression. The results remain qualitatively unchanged in all three robustness checks.

Table SM.4: **Regression analysis of window-to-window log returns in taler closing quote midpoints.** OLS regressions of returns over consecutive post-announcement windows. The dependent variable is the log return of taler closing midpoints over consecutive windows. Returns are signed based on direction of previous earnings change (i.e., the signs of returns following negative announcements are reversed). CORRELATED is a dummy variable for treatment CORR. CORRELATED_NO_SURPRISE is a dummy variable for an earnings change carrying the same sign as the earnings change in the previous announcement in treatment CORR. CORRELATED_SURPRISE is a dummy for an earnings change carrying the opposite sign as in the previous announcement in treatment CORR. CORRELATED_FIRST_ANNOUNCEMENT is a dummy for returns stemming from the phase following the first announcement in treatment CORR (which is neither unambiguously surprising nor unsurprising). POSITIVE_EARNINGS_CHANGE is a dummy variable for a positive earnings change. PERIOD0 is the period number within the session, rebased to the range 0...3 (instead of 1...4). PHASE0 is the phase number within the period, rebased to 0...3 (instead of 1...4; thus excluding the phase preceding the first announcement, and designating the first post-announcement phase as 0). WINDOW0 is the consecutive ID number of the time window, starting with the window following the announcement window (thus excluding the window directly after the announcement), rebased to 0...16 (instead of 1...17).

	Model 1	Model 2
CONSTANT	1.190*** (0.123)	1.158*** (0.124)
CORRELATED	0.245*** (0.055)	
CORRELATED_NO_SURPRISE		0.101 (0.063)
CORRELATED_SURPRISE		0.542*** (0.142)
CORRELATED_FIRST_ANNOUNCEMENT		0.355*** (0.043)
POSITIVE_EARNINGS_CHANGE	-0.228*** (0.069)	-0.227*** (0.068)
PERIOD0	-0.055 (0.033)	-0.058 (0.033)
PHASE0	0.006 (0.021)	0.032 (0.017)
WINDOW0	-0.188*** (0.029)	-0.189*** (0.029)
WINDOW0 ²	0.008*** (0.002)	0.008*** (0.002)
R ²	0.006	0.006
Adj. R ²	0.005	0.005
Num. obs.	10389	10389
RMSE	5.033	5.032

*** $p < 0.005$; ** $p < 0.01$; * $p < 0.05$. Standard errors, clustered at the Session level, in parentheses.

Table SM.5: **Regression of PEAD in taler closing quote midpoints.** OLS regressions of returns from the end of the announcement window to the end of the phase. The dependent variable is the absolute change in taler closing midpoints per window. Returns are signed based on direction of previous earnings change (i.e., the signs of returns following negative announcements are reversed). CORRELATED is a dummy variable for treatment CORR. CORRELATED_NO_SURPRISE is a dummy variable for an earnings change carrying the same sign as the earnings change in the previous announcement in treatment CORR. CORRELATED_SURPRISE is a dummy for an earnings change carrying the opposite sign as in the previous announcement in treatment CORR. CORRELATED_FIRST_ANNOUNCEMENT is a dummy for returns stemming from the phase following the first announcement in treatment CORR (which is neither unambiguously surprising nor unsurprising). POSITIVE_EARNINGS_CHANGE is a dummy variable for a positive earnings change. PERIOD0 is the period number within the session, rebased to the range 0...3 (instead of 1...4). PHASE0 is the phase number within the period, rebased to 0...3 (instead of 1...4).

	Model 1	Model 2
CONSTANT	5.458*** (0.840)	4.886*** (0.762)
CORRELATE	3.855*** (0.954)	
CORRELATED_NO_SURPRISE		1.223 (0.768)
CORRELATED_SURPRISE		9.920*** (1.935)
CORRELATED_FIRST_ANNOUNCEMENT		5.604*** (1.644)
POSITIVE_EARNINGS_CHANGE	-4.184*** (1.151)	-4.129*** (1.134)
PERIOD0	-0.095 (0.325)	-0.142 (0.326)
PHASE0	0.479 (0.356)	0.889*** (0.205)
R ²	0.077	0.128
Adj. R ²	0.071	0.119
Num. obs.	584	584
RMSE	9.910	9.652

*** $p < 0.005$; ** $p < 0.01$; * $p < 0.05$. Standard errors, clustered at the Session level, in parentheses.

Table SM.6: **Fixed-effects regression of window-to-window changes in taler closing quote midpoints.** Fixed-effects regressions of returns over consecutive post-announcement windows. The dependent variable is the absolute change in taler closing midpoints per window. Returns are signed based on direction of previous earnings change (i.e., the signs of returns following negative announcements are reversed). CORRELATED is a dummy variable for treatment CORR. CORRELATED_NO_SURPRISE is a dummy variable for an earnings change carrying the same sign as the earnings change in the previous announcement in treatment CORR. CORRELATED_SURPRISE is a dummy for an earnings change carrying the opposite sign as in the previous announcement in treatment CORR. CORRELATED_FIRST_ANNOUNCEMENT is a dummy for returns stemming from the phase following the first announcement in treatment CORR (which is neither unambiguously surprising nor unsurprising). POSITIVE_EARNINGS_CHANGE is a dummy variable for a positive earnings change. We include period×phase×window fixed effects.

	Model 1	Model 2
CONSTANT	1.955 (1.139)	1.895 (1.155)
CORRELATED	0.231*** (0.062)	
POSITIVE_EARNINGS_CHANGE	-0.201*** (0.068)	-0.200*** (0.067)
CORRELATED_NO_SURPRISE		0.064 (0.066)
CORRELATED_SURPRISE		0.573*** (0.142)
CORRELATED_FIRST_ANNOUNCEMENT		0.361*** (0.053)
Period × phase × window FE	<i>yes</i>	<i>yes</i>
R ²	0.031	0.031
Adj. R ²	0.005	0.005
Num. obs.	10389	10389

*** $p < 0.005$; ** $p < 0.01$; * $p < 0.05$. Standard errors, clustered at the Session level, in parentheses.

B.4. Spreads

The main paper contains a visual inspection of the bid-ask spreads in our experimental markets based on a plot of average bid and ask prices. To verify the robustness of the results we also perform a regression analysis. The dependent variable is the bid-ask spread at the end of each 10s window. As independent variables we include different dummy variables for treatment CORR in Models 1 and 2. In Model 1 we use a dummy variable identifying any observations from treatment CORR, while in Model 2 we use separate dummy variables identifying observations from phases following unsurprising announcements in treatment CORR, observations from phases following surprising announcements in treatment CORR, and observations from the phase following the first announcement in treatment CORR. We furthermore include a dummy variable identifying observations from phases following positive earnings changes, and count variables for the period number, the phase within a period, and the window within a phase. We also include the squared window number to allow for nonlinear dynamics.

The results are shown in shown in Table SM.7 and confirm the conclusions from the visual inspection of the data. Spreads start out close to 30 talers at the beginning of the first period of treatment BASE markets. Spreads are consistently larger in treatment CORR, even if the difference is only significant for observations following surprising (and first) announcements. There are no significant differences between the spreads following positive and following negative earnings announcements. Importantly, the initially high spreads decline over the periods of a session, the phases of a period, and the windows of a phase.

Table SM.7: **Spread regressions.** OLS regressions of taler spreads at the close of consecutive 10s windows starting with the announcement window. CORRELATED is a dummy variable for treatment CORR. CORRELATED_NO_SURPRISE is a dummy variable for an earnings change carrying the same sign as the earnings change in the previous announcement in treatment CORR. CORRELATED_SURPRISE is a dummy variable for an earnings change carrying the opposite sign as in the previous announcement in treatment CORR. CORRELATED_FIRST_ANNOUNCEMENT is a dummy variable for the phase following the first announcement in treatment CORR (which is neither unambiguously surprising nor unsurprising). POSITIVE_EARNINGS_CHANGE is a dummy variable for a positive earnings change. PERIOD0 is the period number within the session, rebased to the range 0...3 (instead of 1...4). PHASE0 is the phase number within the period, rebased to 0...3 (instead of 1...4; thus excluding the phase preceding the first announcement, and designating the first post-announcement phase with 0). WINDOW is the consecutive ID number of the time window (0...17), starting with the “announcement window”, i.e., the 10s-window starting at the time of the announcement.

	(1) Spread	(2) Spread
CONSTANT	28.179*** (3.263)	27.140*** (2.987)
CORRELATED	16.163 (8.538)	
CORRELATED_NO_SURPRISE		14.949 (9.287)
CORRELATED_SURPRISE		15.075** (5.759)
CORRELATED_FIRST_ANNOUNCEMENT		19.687* (9.171)
POSITIVE_EARNINGS_CHANGE	1.832 (1.469)	1.829 (1.464)
PERIOD0	-4.921*** (1.615)	-4.922*** (1.600)
PHASE0	-2.415*** (0.704)	-1.714*** (0.506)
WINDOW	-1.077*** (0.193)	-1.080*** (0.192)
WINDOW ²	0.033*** (0.008)	0.033*** (0.008)
R ²	0.155	0.157
Adj. R ²	0.155	0.157
Num. obs.	11144	11144
RMSE	24.657	24.630

*** $p < 0.005$, ** $p < 0.01$, * $p < 0.05$. Standard errors, clustered at the session level, in parentheses.

B.5. Mispricing

As a robustness check, we repeat the regressions reported in Table A.1 in the paper using as our dependent variable mispricing at the level of the phase instead at the level of the individual window. We report the results in Table SM.8. They remain qualitatively unchanged, despite the substantially reduced number of observations.

Table SM.8: **Regression analysis of absolute mispricing.** OLS regressions of average mispricing (measured at the end of each window) in each phase. Model (1) reports mispricing pooled across announcement types, while Models (2) and (3) report mispricing following positive and negative announcements, respectively. The dependent variable is the geometric absolute deviation (GAD) in percent, calculated using closing midpoints for each phase as in Powell (2016) and Equation 6. CORRELATED_NO_SURPRISE is a dummy variable for phases following an earnings change carrying the same sign as in the preceding announcement in treatment CORR. CORRELATED_SURPRISE is a dummy for an earnings change carrying the opposite sign as in the preceding announcement in treatment CORR. CORRELATED_FIRST_ANNOUNCEMENT is a dummy for observations from the phase following the first announcement in treatment CORR. PERIOD0 is the period number within the session, rebased to the range 0...3 (instead of 1...4). PHASE0 is the phase number within the period, rebased to 0...3 (instead of 1...4; in the case of the ‘Pooled’ regression, the phase prior to the first announcement is included, such that the range of the phase number is 0...4 in this case).

	Pooled	Positive announcements	Negative announcements
CONSTANT	10.950*** (1.866)	8.266*** (1.368)	11.387*** (1.713)
CORRELATED_NO_SURPRISE	4.474 (2.382)	2.538 (1.992)	5.791* (2.639)
CORRELATED_SURPRISE	4.284*** (1.375)	3.485* (1.724)	4.639* (1.826)
CORRELATED_FIRST_ANNOUNCEMENT	3.233* (1.544)	2.073 (2.145)	3.305 (1.982)
PERIOD0	-1.470** (0.560)	-1.276*** (0.397)	-0.685 (0.514)
PHASE0	-0.962* (0.383)	-0.620*** (0.188)	-1.696*** (0.408)
R ²	0.087	0.091	0.121
Adj. R ²	0.081	0.077	0.106
Num. obs.	787	317	311

*** $p < 0.005$; ** $p < 0.01$; * $p < 0.05$. Standard errors, clustered at the Session level, in parentheses.

B.6. Trading strategies

We performed a number of checks to ensure that our results are robust to variations in the trading strategies. Firstly, in Table SM.9 we split the results of our CORR treatment by the ‘Surprise’ variable. In almost all cases we see significant profits as well as higher profits after ‘surprising’ vs. ‘unsurprising’ announcements (profits become insignificant in some instances, though, due to small sample sizes). Secondly, in Table SM.10 we look at Strategy *Limit Orders* specifically, and vary the timing of orders. We find that the cutoff point for opening order acceptance and the timing of the closing order submission can be varied without a material change in results. If, instead of 90s, we set it to 60s (Panel 1) or 120s (Panel 3) we see no qualitative change in results. Longer timeframes (i.e., 120s) appear to be even more profitable, since opening and closing price tend to be further apart (this holds in spite of having to close these positions more frequently with market orders, which are less profitable). Thirdly, Table SM.11 we vary the level at which the opening and closing order are submitted in Strategy *Limit Orders* (the following elaboration applies to positive announcements, for negative announcement the opposite applies). Instead of placing opening and closing order at the midpoints, we can open [close] midway between midpoint and best ask [bid] (Panel 1), or we can open [close] midway between midpoint and best bid [ask] (Panel 3). The former option is more conservative, gets more frequently executed, but has negative returns. The latter option is more aggressive, gets less frequently executed, but has higher returns than even the default option (opening and closing at midpoint). Even higher returns can be achieved by placing opening [closing] order at best bid plus [ask minus] one taler (Panel 4).

Table SM.9: **Trading strategy returns per phase in CORR treatment, split by ‘Surprise’ variable.** Average single-phase aggregated log returns (in percent) to the long and short legs of two trading strategies. ‘Delay’ is the time (in seconds) between the earnings announcement and the time at which the position is opened.

Delay	No surprise		Surprise	
	Mean	SE	Mean	SE
Strategy <i>Market Orders</i>	Open at best bid/ask, close at best bid/ask.			
0	-20.57***	(3.68)	-4.52	(5.27)
2	-21.48***	(3.67)	-5.54	(5.19)
4	-22.36***	(3.63)	-6.35	(5.09)
6	-23.29***	(3.60)	-10.27*	(5.10)
8	-24.59***	(3.61)	-13.38*	(5.18)
10	-26.20***	(3.67)	-16.89***	(5.13)
Strategy <i>Limit Orders</i>	Open using limit order at quote midpoint, close using limit order at quote midpoint after 90s or market order at 170s.			
0	2.86***	(0.57)	4.04*	(1.69)
2	2.47***	(0.54)	2.21	(2.24)
4	2.44***	(0.54)	3.54*	(1.51)
6	1.90***	(0.57)	2.41	(1.50)
8	1.42**	(0.54)	2.49	(1.69)
10	1.08	(0.58)	1.52	(1.66)

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.005$ (two-tailed t -test)

Table SM.10: **Strategy *Limit Orders* with different execution timings.** Average single-phase aggregated log returns (in percent) to the long and short legs of Strategy *Limit Orders* with closing times of 60s, 90s, and 120s. ‘Delay’ is the time (in seconds) between the earnings announcement and the time at which the position is opened.

Delay	BASE		CORR	
	Mean	SE	Mean	SE
Strategy 3: Submit closing limit order 60s after the announcement.				
0	1.75***	(0.26)	2.48***	(0.56)
2	1.41***	(0.25)	2.06***	(0.62)
4	1.23***	(0.24)	2.03***	(0.52)
6	0.99***	(0.23)	1.57***	(0.51)
8	0.73***	(0.25)	1.05*	(0.48)
10	0.70**	(0.25)	0.71	(0.46)
Strategy 3: Submit closing limit order 90s after the announcement.				
0	2.20***	(0.29)	3.51***	(0.60)
2	1.83***	(0.29)	2.93***	(0.66)
4	1.75***	(0.28)	2.94***	(0.54)
6	1.39***	(0.24)	2.26***	(0.55)
8	1.22***	(0.26)	1.85***	(0.54)
10	1.05***	(0.25)	1.41*	(0.55)
Strategy 3: Submit closing limit order 120s after the announcement.				
0	1.83***	(0.26)	3.76***	(0.63)
2	1.41***	(0.25)	3.32***	(0.70)
4	1.35***	(0.25)	3.37***	(0.62)
6	1.11***	(0.25)	2.67***	(0.62)
8	0.80*	(0.31)	2.05***	(0.59)
10	0.68*	(0.31)	1.67***	(0.58)

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.005$ (two-tailed t -test)

Table SM.11: **Strategy *Limit Orders* with different execution levels.** Average single-phase aggregated log returns (in percent) to the long and short legs of Strategy *Limit Orders* with different closing options. ‘Delay’ is the time (in seconds) between the earnings announcement and the time at which the position is opened.

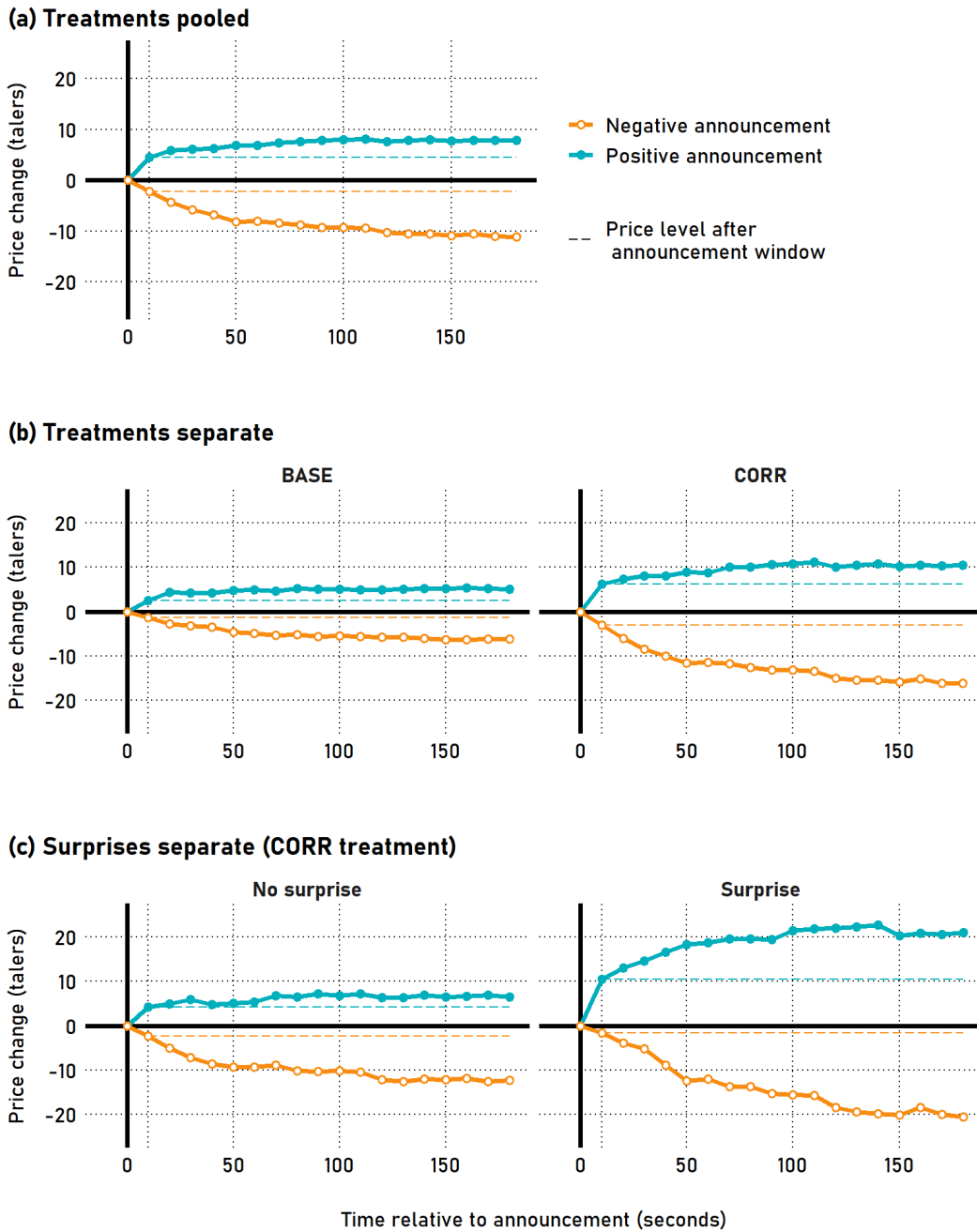
Delay	BASE		CORR	
	Mean	SE	Mean	SE
Strategy <i>Limit Orders</i>: Limit orders between midpoint and market order.				
0	-1.45***	(0.33)	-4.82***	(1.17)
2	-1.71***	(0.32)	-4.92***	(1.22)
4	-2.22***	(0.33)	-5.78***	(1.15)
6	-2.75***	(0.32)	-7.00***	(1.12)
8	-3.10***	(0.35)	-8.18***	(1.13)
10	-3.40***	(0.35)	-9.30***	(1.16)
Strategy <i>Limit Orders</i>: Limit orders at midpoint.				
0	2.20***	(0.29)	3.51***	(0.60)
2	1.83***	(0.29)	2.93***	(0.66)
4	1.75***	(0.28)	2.94***	(0.54)
6	1.39***	(0.24)	2.26***	(0.55)
8	1.22***	(0.26)	1.85***	(0.54)
10	1.05***	(0.25)	1.41*	(0.55)
Strategy <i>Limit Orders</i>: Limit orders between midpoint and best offer.				
0	6.02***	(0.48)	15.76***	(1.21)
2	5.79***	(0.48)	14.84***	(1.22)
4	5.83***	(0.48)	14.74***	(1.16)
6	5.59***	(0.46)	14.38***	(1.19)
8	5.45***	(0.46)	13.82***	(1.14)
10	5.11***	(0.45)	13.30***	(1.14)
Strategy <i>Limit Orders</i>: Limit orders 1 taler away from best offer.				
0	7.38***	(0.61)	19.30***	(2.07)
2	7.06***	(0.61)	17.86***	(2.07)
4	7.10***	(0.62)	17.77***	(2.06)
6	6.89***	(0.60)	17.63***	(2.08)
8	6.69***	(0.59)	17.70***	(2.10)
10	6.61***	(0.58)	17.07***	(2.05)

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.005$ (two-tailed t -test)

B.7. Participant experience

The results presented in Figure 4 of the paper are obtained by aggregating the data across all periods of each session. To check whether the PEAD we found is driven by participant inexperience early in a session and disappears as the session proceeds, we repeat our analysis after excluding the first period (and thus only considering periods 2–4 of each session). The results, shown in Figure SM.1, remain qualitatively unchanged.

Figure SM.1: **Price changes in talers relative to the quote midpoint at the time of the announcement in periods 2–4.** Average price changes relative to the quote midpoint at the time of the announcement, using the closing quote midpoint for each 10s window following the announcement in periods 2–4. Panel (a) plots results for the pooled data from all treatments; Panel (b) reports results separately for treatments BASE (left) and CORR (right); Panel (c) plots only CORR data and reports results separately for unsurprising (left) and surprising (right) earnings news, using only data from Phases 2 through 4. The blue [orange] line plots the cumulative price changes following positive [negative] earnings news. The dashed horizontal lines of the same colors indicate the price levels at the end of the 10s announcement window.



Similarly, we repeat our analyses presented in Table 3 of the paper, again excluding the first period. We detect no material changes and report the results in Table SM.12.

Table SM.12: **Post-earnings-announcement drift in periods 2–4.** Mean taler gains based on quote midpoints from the end of the announcement window until the end of the phase. We report t -statistics in parentheses.

	Treatments				CORR Treatment ^a		
	All	BASE	CORR	Δ	No Surprise	Surprise	Δ
Long	3.23*** (5.77)	2.50*** (4.44)	3.93*** (4.12)	1.43 (1.29)	2.33* (2.07)	10.05*** (3.77)	7.72* (2.67)
Short	-8.40*** (-13.55)	-4.67*** (-8.71)	-12.48*** (-12.38)	-7.81*** (-6.84)	-9.61*** (-8.54)	-17.33*** (-5.92)	-7.72* (-2.46)
Long-Short	11.23*** (12.59)	6.86*** (7.84)	16.03*** (10.99)	9.16*** (5.39)	12.56*** (6.78)	23.82*** (6.04)	11.26* (2.59)

*** $p < 0.005$, ** $p < 0.01$, * $p < 0.05$ (two-tailed t -test)

Note: Values based on all phases where both the first and the last 10s windows following an announcement (windows 0 and 17) have both a bid and an ask, thus permitting us to calculate quote midpoints (includes 94.2 percent, 84.6 percent, and 82.1 percent of Long, Short, and Long-Short phases, respectively).

^a CORR treatment data separated by the surprise variable excludes the phase following the first announcement (Phase 1).

We next repeat the analysis in Table 4 of the paper using only periods 2–4. The results are shown in Table SM.13. They are qualitatively similar for the most part. There is a significant PEAD, and it is significantly larger in the CORR treatment. The only material difference to the results in the main paper is that the coefficients of the PERIOD0 count variable now is significant, implying that the magnitude of the PEAD decreases between periods 2 and 4.

Finally, we repeat the analysis using period 4 data only (not reported). We find that our key results hold in spite of the much smaller sample size. Specifically, the constant and the coefficients of the dummy variables CORRELATED, CORRELATED_SURPRISE, and CORRELATED_FIRST_ANNOUNCEMENT retain their signs and remain significant at least at the 0.05-level.

Table SM.13: **Regression analysis of window-to-window changes in taler closing quote midpoints for periods 2–4.** OLS regressions of returns over consecutive post-announcement windows. The dependent variable is the absolute change in taler closing midpoints per window. Returns are signed based on direction of previous earnings change (i.e., the signs of returns following negative announcements are reversed). CORRELATED is a dummy variable for treatment CORR. CORRELATED_NO_SURPRISE is a dummy variable for an earnings change carrying the same sign as the earnings change in the previous announcement in treatment CORR. CORRELATED_SURPRISE is a dummy for an earnings change carrying the opposite sign as in the previous announcement in treatment CORR. CORRELATED_FIRST_ANNOUNCEMENT is a dummy for returns stemming from the phase following the first announcement in treatment CORR (which is neither unambiguously surprising nor unsurprising). POSITIVE_EARNINGS_CHANGE is a dummy variable for a positive earnings change. PERIOD0 is the period number within the session (excluding the first period), rebased to the range 0...2 (instead of 2...4). PHASE0 is the phase number within the period, rebased to 0...3 (instead of 1...4; thus excluding the phase preceding the first announcement, and designating the first post-announcement phase as 0). WINDOW0 is the consecutive ID number of the time window, starting with the window following the announcement window (thus excluding the window directly after the announcement), rebased to 0...16 (instead of 1...17).

	Model 1	Model 2
CONSTANT	1.131*** (0.136)	1.102*** (0.132)
CORRELATED	0.236*** (0.051)	
CORRELATED_NO_SURPRISE		0.124* (0.050)
CORRELATED_SURPRISE		0.448*** (0.143)
CORRELATED_FIRST_ANNOUNCEMENT		0.326*** (0.064)
POSITIVE_EARNINGS_CHANGE	-0.265*** (0.075)	-0.265*** (0.075)
PERIOD0	-0.076*** (0.025)	-0.077*** (0.024)
PHASE0	-0.000 (0.023)	0.022 (0.022)
WINDOW0	-0.176*** (0.030)	-0.177*** (0.030)
WINDOW0 ²	0.007*** (0.002)	0.008*** (0.002)
R ²	0.008	0.008
Adj. R ²	0.007	0.007
Num. obs.	7787	7787

*** $p < 0.005$, ** $p < 0.01$, * $p < 0.05$. Standard errors, clustered at the session level, in parentheses.

Turning to our analysis of the profitability of trading strategies we again start by studying the evolution of spreads over time. Figure SM.2, which uses only data from periods 2–4, presents a picture that is essentially unchanged from Figure 5 in the main text.

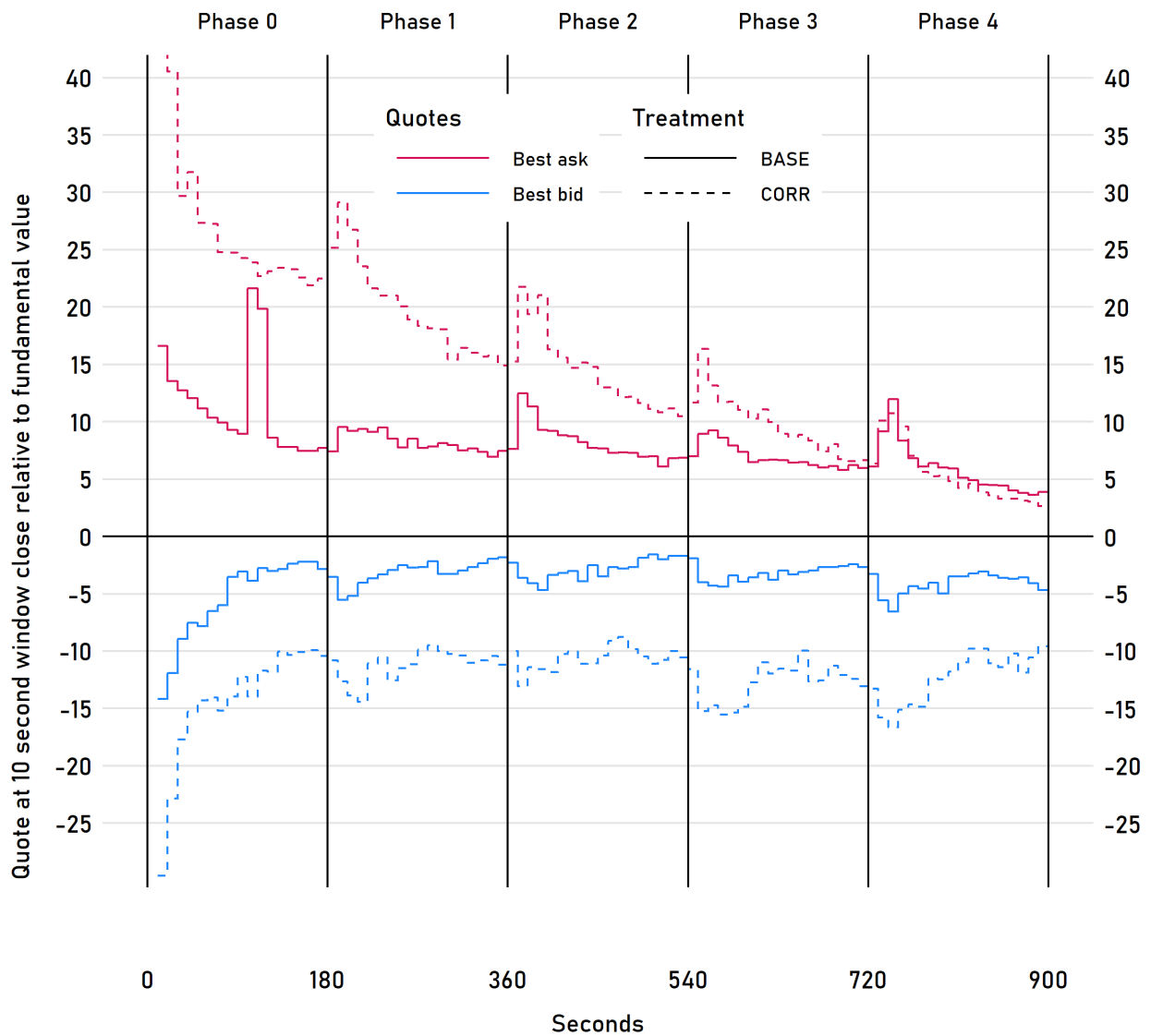


Figure SM.2: **Development of spreads over time in periods 2–4.** Average difference between best ask quote and FV (red), and between best bid quote and FV (blue), in talers, over the trading period using only period 2–4 data. Solid lines plot treatment BASE data, dashed lines treatment CORR data.

We also repeat the analysis on trading strategy returns presented in Table 5 in the

Table SM.14: **Trading strategy returns per phase for periods 2–4.** Average single-phase aggregated log returns (in percent) to the long and short legs of two trading strategies. ‘Delay’ is the time (in seconds) between the earnings announcement and the time at which the position is opened.

Delay	BASE		CORR	
	Mean	SE	Mean	SE
Strategy <i>Market Orders</i>	Open at best bid/ask, close at best bid/ask.			
0	-3.86***	(0.51)	-12.83***	(2.58)
2	-4.57***	(0.51)	-13.66***	(2.55)
4	-6.40***	(0.69)	-15.17***	(2.51)
6	-7.43***	(0.68)	-17.15***	(2.46)
8	-8.05***	(0.75)	-19.06***	(2.46)
10	-8.46***	(0.76)	-20.39***	(2.44)
Strategy <i>Limit Orders</i>	Open using limit order at quote midpoint, close using limit order at quote midpoint after 90s or market order at 170s.			
0	2.05***	(0.28)	3.28***	(0.51)
2	1.57***	(0.27)	2.49***	(0.62)
4	1.42***	(0.27)	2.72***	(0.49)
6	1.02***	(0.21)	2.12***	(0.47)
8	0.84***	(0.24)	1.74***	(0.49)
10	0.71***	(0.24)	1.42***	(0.47)

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.005$ (two-tailed t -test)

paper using only periods 2–4. The results, presented in Table SM.14, remain qualitatively unchanged.

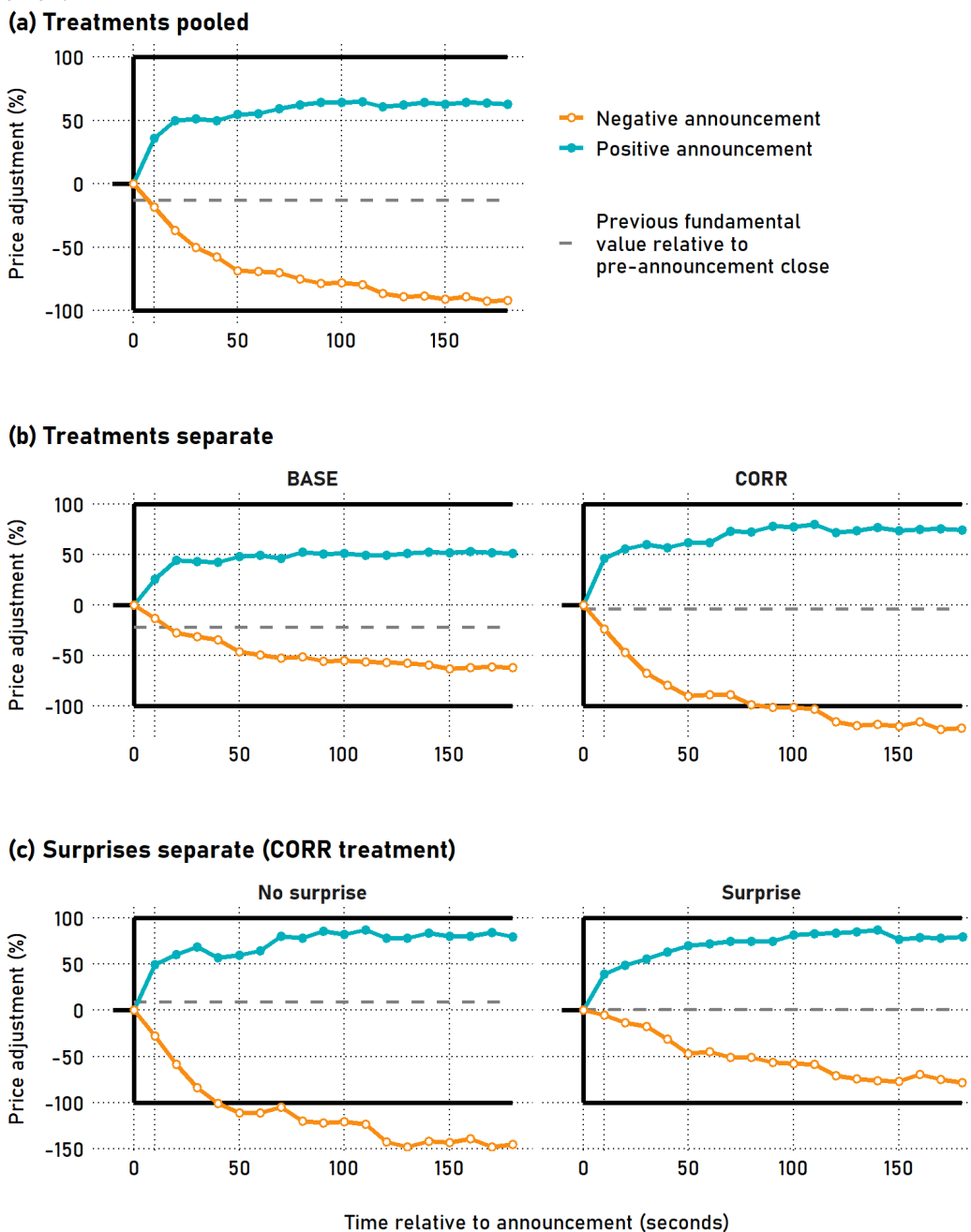
We next repeat the analysis of mispricing, presented in Table 6 in the paper, using only periods 2–4. The results, presented in Table SM.15, are qualitatively unchanged.

Table SM.15: **Mispricing for periods 2–4.** Measures of relative (GD) and absolute (GAD) mispricing relative to FV . ‘Starting phase’ is Phase 0, the phase prior to the first earnings announcement. ‘First announcement’ is Phase 1, the phase following the first announcement, in treatment CORR.

<i>Treatment</i>	<i>Phases</i>	GD	GAD	Observations
All	All	2.32%	7.70%	600
	Starting phase	4.19%	7.31%	120
	Positive earnings change	-3.05%	5.62%	240
	Negative earnings change	6.74%	9.99%	240
BASE	All	2.52%	5.99%	300
	Starting phase	2.52%	5.30%	60
	Positive earnings change	-1.79%	4.52%	120
	Negative earnings change	6.82%	7.81%	120
CORR	All	2.11%	9.41%	300
	Starting phase	5.86%	9.32%	60
	First announcement	5.53%	9.95%	60
	Positive earnings change	-4.30%	6.71%	120
	First announcement	-2.44%	5.56%	30
	Surprise	-2.96%	7.09%	23
	No Surprise	-5.60%	7.10%	67
	Negative earnings change	6.65%	12.16%	120
	First announcement	13.51%	14.35%	30
	Surprise	7.57%	10.92%	23
No Surprise	3.27%	11.61%	67	

Finally, we re-create Figure 6 using only period 2–4 data and plot the result in Figure SM.3. Once again, we find no material changes when excluding the data from the first period.

Figure SM.3: Adjustment of stock price as a percentage of the change in fundamental value induced by an announcement in periods 2–4. Panel (a) plots results for the pooled data from all treatments; Panel (b) reports results separately for treatments BASE (left) and CORR (right); Panel (c) plots only CORR data and reports results separately for unsurprising (left) and surprising (right) earnings news. The blue, upward trending [orange, downward trending] line plots price adjustment following positive [negative] earnings news. The bold, black, horizontal lines indicate full adjustment of prices to the change in FV induced by the earnings announcement. The thin, dotted horizontal line at 0 indicates the price level at the moment of the earnings announcement. The dashed horizontal line indicates FV prior to the earnings announcement.



C. Experimental instructions

The experimental instructions contained a total of 8 pages and are provided on the following pages. The experimenter distributed page 1 and told the participants to read along while he read the page out aloud. He then gave the instructions contained on page 2 of the instructions reproduced here (which were not part of the printed instructions distributed to participants). Following the explanation of the trading screen and the practice round, the experimenter distributed the remainder of the instructions (pages 2 through 8 according to the page numbers on the participants' versions) and again read them out aloud. Participants then answered a set of control questions which are provided in section D of this online appendix. Finally, the experimenter answered (individually) any remaining questions the participants had before starting the treatment.

Preliminary note

Today's experiment is called "Market experiment I", will take approximately 2 hours and will help us in understanding behavior on the stock market.

Instructions to trading in the market

Today's experiment is a simulation of a stock market. In the experiment you will be a member of a group consisting of you and 11 other participants. Over the course of the experiment the composition of your group will remain unchanged and you will be trading stocks and interacting exclusively with participants of your group.

Every trader can act as a buyer as well as as a seller. An order consists of the price at which you would like to buy or sell. Each order is for one share of the stock that is being traded.

The shares of two different companies will be traded in the market, company A and company B. The shares will also be referred to as A and B. The price is solely determined by the traders' supply and demand. When you buy a share, your taler balance (= money) will decrease by the purchase price, and your share balance will increase by one. Conversely, when you sell a share, your taler balance will increase by the sales price and your share balance will decrease by one.

Your taler and share balances can also become negative through trading. That means that you can spend more money than you own (you take out a loan) and you can sell more shares than you own (you sell short). There are limits to how much money you can borrow and how many shares you can sell short, however. Details on this will be discussed later.

When you take out a loan, someone (e.g., a bank) lends you money which you can spend but must repay later. In the experiment you can borrow money simply by spending more than you own. You can repay the loan before the end of the period by selling shares. You don't have to do that, though. If, at the end of the period, you still have a loan (i.e., a negative cash balance) then the loan value will simply be deducted from your wealth. Your wealth is then the value of your shares minus the loan value. You can picture this as some of your shares being sold automatically to repay the loan.

When you sell short, someone lends you shares that you can sell. You must return the shares later. To do that, you must of course first purchase them back. In the experiment you can sell short simply by selling more shares than you own. You can end the short sale by buying shares until your share balance [\[Page break pages 1-2\]](#) is not negative anymore. You don't have to do that, though. If, at the end of the period, you still have a short sale (i.e., a negative share balance) then the value of the shares will simply be deducted from your cash balance. You can picture this as some of your cash being used to automatically buy back the shares.

Further details on how to calculate your wealth at the end of the period will be discussed later.

[Beginning of text that is being read out loud by the experimenter, but is not contained in the printed instructions.]

We will now go through the trading screen together.

[Explanation of the trading screen elements by the experimenter using a projector.]

We will now conduct an eight minute practice round during which you can familiarize yourselves with the trading screen. Please submit buy and sell orders, accept other participants' buy and sell orders, and cancel orders you have submitted. Please trade on both markets to best familiarize yourself with the possible actions. Be aware that you have to use the period (".") instead of the comma as the decimal separator. Your actions in the practice round do not affect your position or payout later in the experiment.

[End of text that is being read out loud by the experimenter, but is not contained in the printed instructions.][Page break pages 2-3]

Details about stocks and payouts

Stock trading

At the beginning of each period, each trader will receive 9 shares of **one** of the stocks A or B and **no** share of the other stock. You can, however, trade both stocks in the market. There are a total of 54 shares of each stock in the market. You will also receive 900 talers, such that you will be able to both purchase and sell shares. There will be a total of 4 trading periods. Every trading period will end automatically after 15 minutes. Please note that the taler and share balances will not carry over to the next trading period.

Your share and taler (= money) balances can, as was mentioned above, also become negative through trading. However, they can do so only to a limited extent:

Maximum negative taler balance (= maximum loan value): 900 talers

Maximum negative share balance (= maximum short sale amount): 9 shares (for each of stocks A and B)

Company earnings

Companies A and B each have earnings. The companies regularly post earnings announcements that serve as the best estimate of expected future earnings. At the beginning of each trading period, both companies' expected earnings are **5 talers** per share. Throughout the period, the companies will post **four** earnings announcements. At the end of each period there is another, **fifth**, earnings announcement (see the example on the next page). The earnings estimated in the announcements determines the buyback value of the shares at the end of the period (more on this later). The earnings announcements are always shown on your trading screen for both companies at the same time. All traders always receive the same information at the same time. The following earnings announcements are possible:

- Case (1) The earnings of company A increase by 0.50 talers and, at the same time, the earnings of company B decrease by 0.50 talers.
- Case (2) The earnings of company B increase by 0.50 talers and, at the same time, the earnings of company A decrease by 0.50 talers.

[Begin: Only treatment BASE]

The probabilities for Case (1) and Case (2) are always exactly 50%. Successive earnings announcements are **independent of each other**: if a company's earnings increase, from this you **cannot** draw conclusions regarding the subsequent earnings announcement. Instead, for every company and every earnings announcement, the probability of increasing or decreasing earnings is always exactly 50%. At each announcement, however, earnings increase for only one company and decrease for the other company. Thus, the **sum** of the earnings of both companies remains unchanged throughout.

[Page break 3-4]

[End: Only treatment BASE]

[Begin: Only treatment CORR]

The probabilities for Case (1) and Case (2) are exactly 50% in the first announcement. The subsequent earnings announcements then **depend on one another**: if a company's earnings increase, then they will increase again in the subsequent announcement with a probability of 75%. Similarly, a decrease in earnings means that earnings will decrease again in the subsequent announcement with a probability of 75%. This means: When a company's earnings have changed in the preceding announcement, you can expect another change of earnings in the same direction in this announcement with **increased probability**. At each announcement, however, earnings increase for only one company and [Page break 3-4] decrease for the other company. Thus, the **sum** of the earnings of both companies remains unchanged throughout.

[End: Only treatment CORR]

Buyback value of shares

At the end of each trading period you receive the buyback value for your shares. The buyback value depends on the earnings. More precisely, the buyback value is determined as follows:

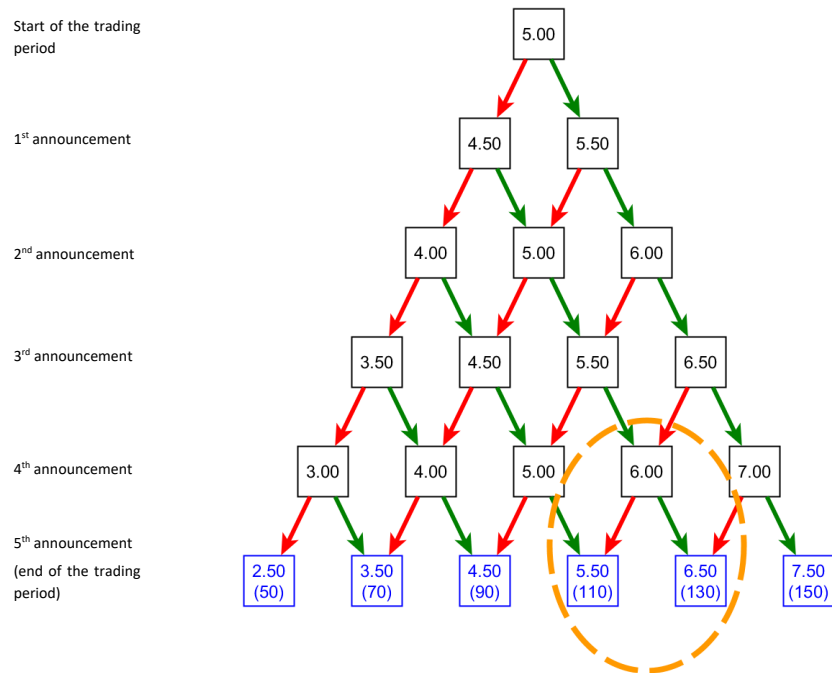
1. Based on the fourth and final earnings announcement during the trading period, there is a fifth earnings announcement according to the rules mentioned above. The result are the **final earnings** of the company.
2. The buyback value of the shares then is exactly **20 times** the final earnings for the respective company (price-earnings ratio).

On the following page you will find an illustration of the possible developments of earnings announcements and buyback values. Please pay attention to the example given in the orange [BASE: oval] [CORR: rectangle]: In the fourth announcement the earnings of the company just increased from 5.50 to 6.00. The probability for a further increase to 6.50 in the fifth announcement is [BASE: 50%] [CORR: 75%], the probability for a decrease to 5.50 is [BASE: also 50%] [CORR: only 25%]. The buyback value after a further increase is $20 \times 6.50 = 130$ and the buyback value after a decrease is $20 \times 5.50 = 110$. Considering the probabilities, the **average buyback value** is [BASE: $0.50 \times 130 + 0.50 \times 110 = 65 + 55 = 120$] [CORR: $0.75 \times 130 + 0.25 \times 110 = 97.5 + 27.5 = 125$]. Please note that this is [BASE: exactly] [CORR: more than] 20 times the earnings after the fourth announcement ($20 \times 6.00 = 120$).

[Page break 4-5]

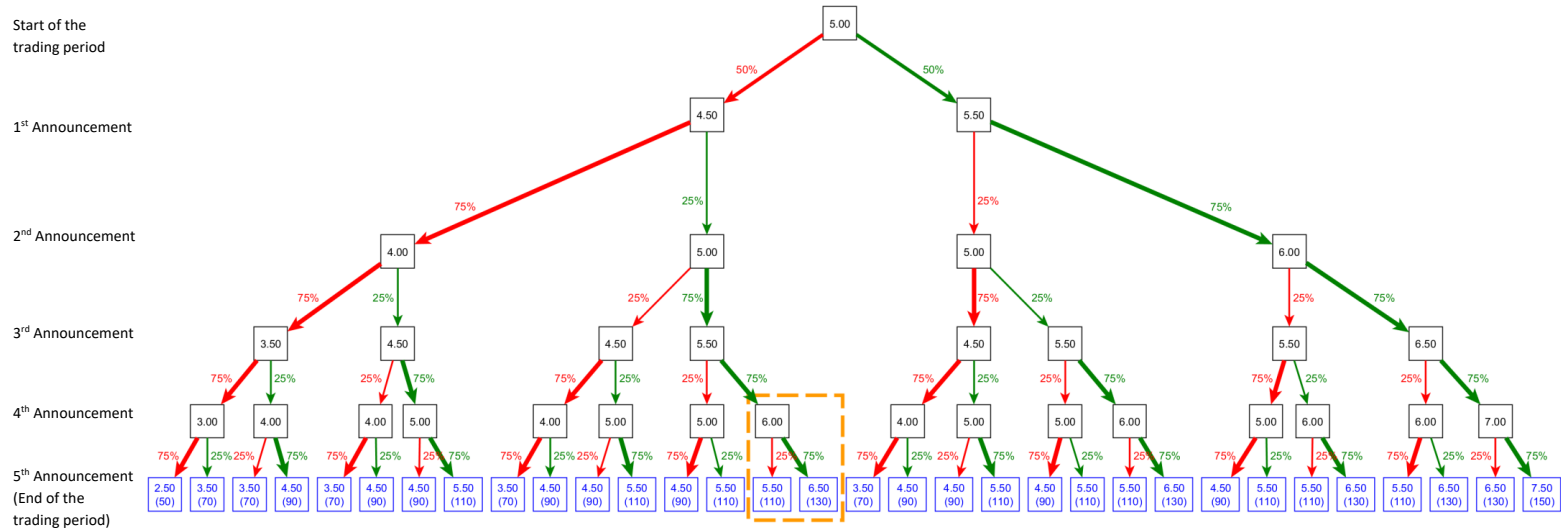
[This page BASE only] Earnings announcements and buyback values

- The number in each black box refers to the earnings announcement
- The first number in each blue box refers to the earnings after the fifth earnings announcement. The second number (in parentheses) refers to the buyback value
- Red arrows pointing left indicate decreasing earnings announcements, green arrows pointing right indicate increasing earnings announcements
- The percentages indicate the probabilities of going from one box to another
- The orange, dashed oval is explained further in the text of the instructions



[This page CORR only] Earnings announcements and buyback values

- The number in each black box refers to the earnings announcement
- The first number in each blue box refers to the earnings after the fifth earnings announcement. The second number (in parentheses) refers to the buyback value
- Red arrows pointing left indicate decreasing earnings announcements, green arrows pointing right indicate increasing earnings announcements
- The percentages indicate the probabilities of going from one box to another
- The orange, dashed rectangle is explained further in the text of the instructions



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[Page break 5-6]

Example

The following table shows you an example of how the companies' announced earnings could develop throughout a trading period and what buyback values could result after the fifth announcement:

Example structure of one trading period (out of four trading periods in the experiment)			
Point in time	Earnings		Trading intervals
	Stock A	Stock B	
Start	5.00	5.00	} 3 minutes of trading
1. Announcement	4.50	5.50	
2. Announcement	4.00	6.00	} 3 minutes of trading
3. Announcement	4.50	5.50	
4. Announcement	4.00	6.00	} 3 minutes of trading
5. Announcement	3.50	6.50	
Payoff	x 20	x 20	} 3 minutes of trading
Buyback value	70 talers	130 talers	

For each share of stock A that you hold in this example, you would get 70 talers at the end of the period. For each share of stock B that you hold in this example, you would get 130 talers. Taken together, you will always receive 200 talers for one share of stock A and one share of stock B at the end of the period.

Calculation of your payoff

Your payoff at the end of the experiment consists of a base payoff of 5 euros plus a variable payoff based on your wealth. To determine the variable payoff, the computer randomly selects one of the four periods at the end of the experiment. The computer then calculates your wealth at the end of this period as follows:

$$\text{Your wealth in talers} = (\text{shares of A stock} \times \text{buyback value A}) + (\text{shares of B stock} \times \text{buyback value B}) + \text{taler balance}$$

A negative taler or share balance reduces your wealth. Your wealth in talers will be divided by 100 to determine your wealth in euros:

$$\text{Wealth in euros} = \text{wealth in talers} / 100$$

[Page break 6-7]

The total payoff then consists of the sum of the base payoff plus the wealth in euros:

$$\text{Total payoff} = \text{wealth in euros} + \text{base payoff}$$

Should your wealth in euros be negative at the end of the selected period, then it will be deducted from your base payoff. The total payoff, however, is bounded from below at to 0 euros.

You will receive your payoff at the end of the experiment in cash and privately (so without being observed by the other participants).

Example

Assume that company A has announced earnings of 6 talers in the fourth announcement, after having announced 5.50 talers in the preceding announcement. The average buyback value of share A is then: **[BASE: $(0.50 \times 20 \times 5.50) + (0.50 \times 20 \times 6.50) = 120$ talers] [CORR: $(0.25 \times 20 \times 5.50) + (0.75 \times 20 \times 6.50) = 125$ talers]** (this is exactly the example from above). If you hold one share of stock A until the end of the period, this leads to an average payoff of: **[BASE: 120 talers / $100 = 1.20$ euros] [CORR: 125 talers / $100 = 1.25$ euros]**.

Assume now that you **buy** one share of stock A for 245 talers and hold it until the end of the period. So, you pay 245 talers and receive a share with an expected buyback value of 125 talers. In sum, the expected payout resulting from this purchase for you is: $(-245 + 125) / 100 = -1.20$ euros. If you **sell** a unit of share A for 245 talers then your expected payoff from this sale is +1.20 euros.

Note

If, for example, you buy a share for 170 talers and hold it until the end of the period then you are guaranteed a loss, because the maximum buyback value will be 150 talers. Similarly, if you sell a share for 40 talers instead of holding it until the end of the period you are also guaranteed a loss, because the minimum buyback value will be 50 talers.

[Page break 7-8]

Summary of the most important details of the experiment:

- During each period there are four earnings announcements, at the end of each period there is a fifth announcement.
- Each company's earnings start out at 5 talers and they change by 0.50 talers in each announcement.
- At every announcement, one company's earnings increase, while the other company's earnings decrease.
- [BASE: The probability both of an earnings increase and of an earnings decrease always equals 50%. You cannot draw any conclusions regarding the direction of the subsequent announcement from the direction of the preceding announcement.]
- [CORR: At the first announcement, the probability both of an earnings increase and of an earnings decrease equals 50%.
In the following announcements the probability for a change in the same direction as the previous change is 75% (i.e., increase after increase, and decrease after decrease) and that for a change in the opposite direction is 25% (i.e., increase after decrease, and decrease after increase).]
- The value of the share at the end of the period is 20 times the earnings at the fifth announcement.
- There are 4 periods in total.

Experiment structure

We will now start with a couple of questions to test your understanding of the instructions. In case of doubt, please refer to the instructions before selecting an answer. In case of questions, please raise your hand and the experimenter will come to you to help.

The experiment will commence after the questions. Following the experiment, you will be asked to answer some further questions, which will help us in evaluating the results. At the end you will receive your payoff.

D. Control questions

The control questions were asked after the instructions and trial period. All participants had to answer all questions correctly for the experiment to begin. In case participants had questions during this process, the experimenter privately pointed them to the relevant section of the instructions, taking care not to answer the questions directly or communicate any other information about the experiment while interacting with the participants.

Question No.	Treatment		Question	Correct answer	Single choice answer options				
	BASE	CORR			1	2	3	4	5
1	X	X	Assume you conclude the first trading period with 980 talers, 4 A-shares and 2 B-shares. What will your taler and share holdings be at the beginning of the second trading period?	2	I begin the second trading period with 980 talers, 4 A-shares and 2 B-shares.	I begin the second trading period with 900 talers and 9 shares (either A or B).			
2	X	X	Assume you have 900 talers and 9 B-shares at the beginning of the trading period. You would like to sell A-shares even though you do not own A-shares. Which answer is correct?	3	If you do not own any A-shares you cannot sell A-shares.	You can sell as many A-shares as you like. Your holding of shares will become negative (so-called short sale).	You can sell A-shares, but not more than 9. Your holding of shares will become negative (so-called short sale).		
3	X	X	Assume you conclude a trading period with 1500 talers, 4 A-shares and -6 B-shares (negative holding of B!). The buyback values of the shares are A: 70, B: 130. What is your wealth in talers?	1000					
4	X	X	Assume your wealth in talers at the end of a trading period is 1900 and this trading period is selected for the calculation of your payout. What is your cash compensation in euros (incl. base compensation)?	24					
5	X	X	You see company A's earnings increase by 0.50 in the announcement. What can you say about the change in company B's estimated earnings?	1	The estimated earnings of B decrease by 0.50.	The estimated earnings of B remain unchanged.	The estimated earnings of B increase by 0.50.	No definitive statement about the estimated earnings of B can be made.	The estimated earnings of B can decrease by 0.50, remain unchanged, or increase by 0.50. No more can be said.
6	X		At the end of the trading period, after the fourth announcement, company B's estimated earnings are 4.00. What can you say about the buyback value of a B-share?	2	It is 80.	It is, with equal probability, 70 or 90.			
		X	At the end of the trading period, after the fourth announcement, company B's estimated earnings are 4.00. In the third announcement, company B's estimated earnings still were 4.50. What can you say about the buyback value of a B-share?	3	It is 80.	It is 90.	It is 70 with 75% probability and 90 with 25% probability.	It is 70 with 25% probability and 90 with 75% probability.	
7	X	X	You are at the beginning of a trading period. What is the maximum possible buyback value of a share at the end of this trading period?	150					
8	X	X	You are at the beginning of a trading period. What is the minimum possible buyback value of a share at the end of this trading period?	50					
9	X	X	After the second announcement, company B's estimated earnings are 4.00. What is the minimum possible buyback value of a B-share at the end of this trading period?	50					
10	X		Company A's estimated earnings increased in the first two announcements. What is the probability for company A's estimated earnings to increase again in the third announcement?	2	It is smaller than 50%.	It is exactly 50%.	It is greater than 50%.		
		X	Company A's estimated earnings increased in the first two announcements. What is the probability for company A's estimated earnings to increase again in the third announcement?	3	It is smaller than 50%.	It is exactly 50%.	It is greater than 50%.		

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