

## 1 Part 1: data preparation

(1)

	<b>s</b>	<b>netwin1</b>	<b>netwin2</b>
<b>mean</b>	-0.034295	0.000546	0.008731
<b>std</b>	6.910801	0.085145	0.340307
<b>min</b>	-1790.209	-0.890778	-1.071007
<b>10th percentile</b>	-0.005455	-0.083904	-0.316339
<b>25th percentile</b>	-0.000437	-0.033229	-0.152914
<b>median</b>	0.000331	0.000182	-0.012081
<b>75th percentile</b>	0.001659	0.034908	0.128584
<b>90th percentile</b>	0.004961	0.084568	0.313767
<b>max</b>	7.432727	1.588795	22.972540

Table 1: Summary Statistics for Earnings Surprises (s), Market-Adjusted Returns for Windows [0,1] (netwin1) and [3,75] (netwin2)

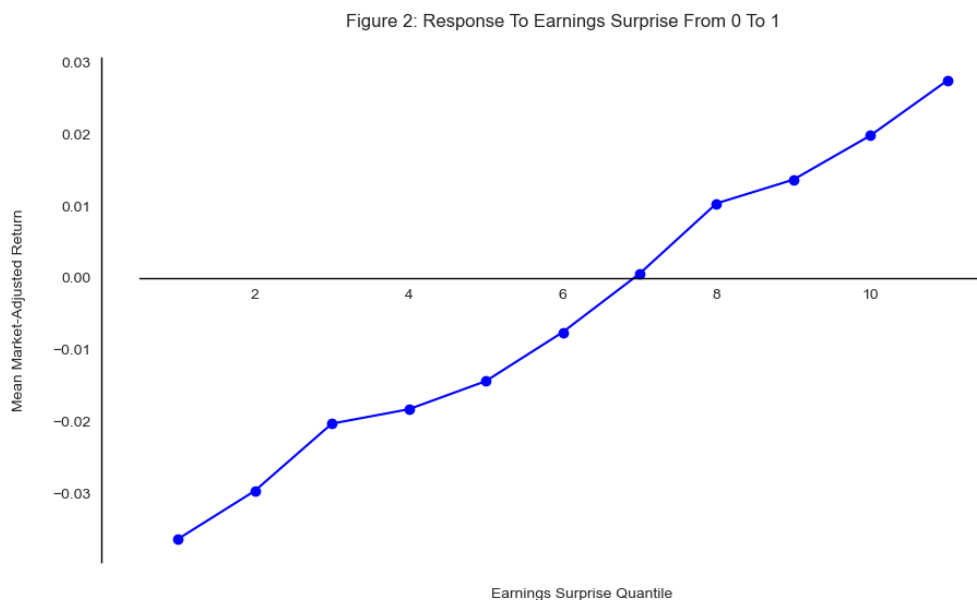
(2) All 3 data series have significant outliers. The earnings surprise data is the most affected while netwin1 seems to be the least affected. This can be inferred from the Kurtosis number and by comparing the standard deviation and sample variance to the mean. The presence of outliers can increase the likelihood of both Type I errors (false positives) and Type II errors (false negatives) by affecting test statistics. The largest 339th number and the smallest 339th are the winsorization values at 0.05% and 99.5%. This is the same as the winsorization values for sw, netwin1w, netwin2w.

	<b>s</b>	<b>netwin1</b>	<b>netwin2</b>
Mean	(0.03)	0.00	0.01
Standard Error	0.03	0.00	0.00
Median	0.00	0.00	(0.01)
Mode	-	(0.01)	(0.10)
Standard Deviation	6.91	0.09	0.34
Sample Variance	47.76	0.01	0.12
Kurtosis	66,564.25	11.71	405.61
Skewness	(257.06)	0.30	9.04
Range	1,797.64	2.48	24.04
Minimum	(1,790.21)	(0.89)	(1.07)
Maximum	7.43	1.59	22.97
Sum	(2,320.06)	36.96	590.65
Count	67,649	67,649	67,649
Largest (339)	0.05818	0.31124	5.70
Smallest (339)	(0.16225)	(0.31321)	(0.96)
Confidence Level (95.0%)	0.05208	0.00064	0.00

Table 2: Summary Statistics

## 2 Part 2: short-run response

(3)

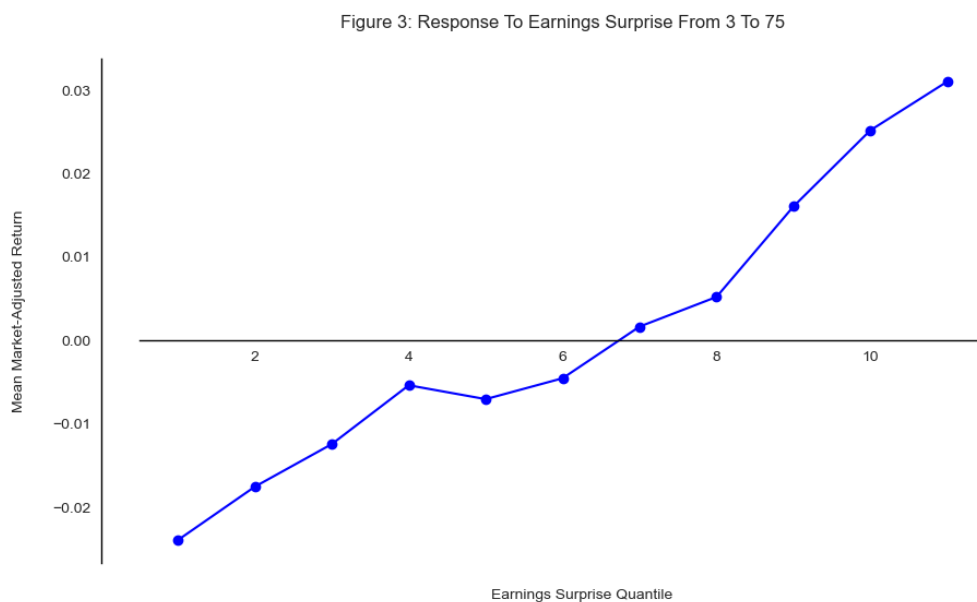


- (4) No, the relationship in Figure 1 does not appear to be linear. The slope of relationship becomes significantly steeper as the mean-market adjusted return approaches 0. One interpretation of this nonlinearity is small earnings surprises may not have as large of an impact on the market-adjusted return as big earnings surprises. This could also mean investors overreact to large surprises and underreact to small earnings surprises.

- (5) This relationship between the market-adjusted return and the earnings surprise quantile does appear to be more of a linear relationship. The mean market-adjusted return increases as you move from the lowest to the highest quintiles of earnings surprise. This relationship suggests the market rewards positive earnings surprises and penalizes negative ones in a consistent way. Positive surprises are associated with higher returns, and negative surprises with lower returns. And because the relationship is linear, each earnings surprise quantile has a predictable impact on returns.

### 3 Part 3: Post-earnings announcement drift

(6)



- (7) The efficient market hypothesis (EMH) says that stock prices should immediately reflect all known information. This means that all responses to unexpected earnings should happen right now, and there shouldn't be a pattern in returns afterward. After the earnings report, we wouldn't expect any systematic post-announcement shift in the [3,75] window, no matter how big the earnings surprise was. However, the plot shows that earnings surprise quantiles (`sw_quantiles`) and post-announcement drift (`netwin2w`) are related. Higher surprises in earnings are related to higher average returns in the [3,75] window. It seems that the market doesn't fully get information from earnings reports immediately, so prices change slowly. This result goes against the efficient market theory, showing that markets may take a while to fully get information about earnings.

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### 4 Part 4: Inattention and distractions

(9)

5 Part 5: Open-ended

(10)

(11)

6 Appendix

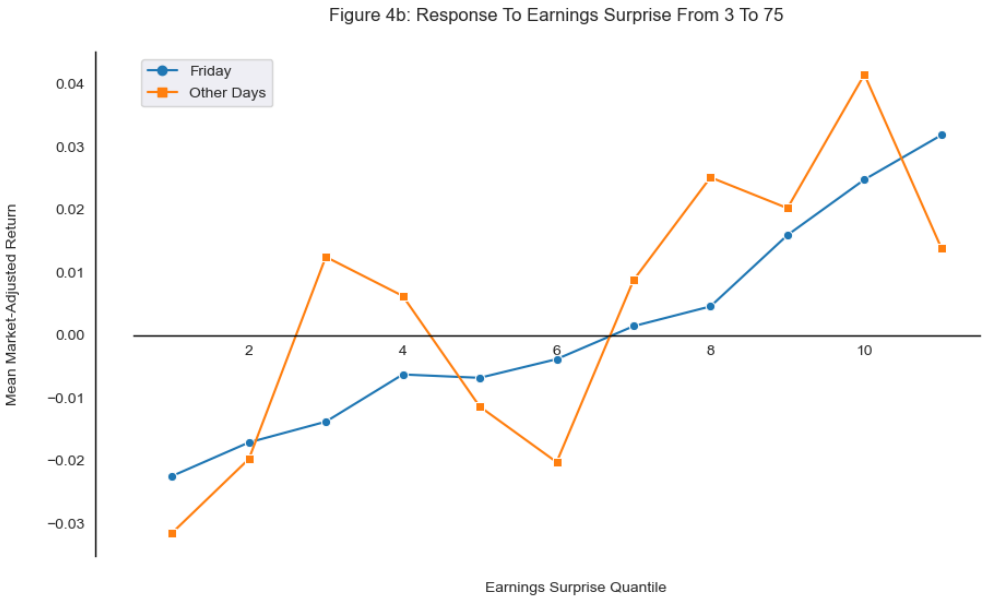
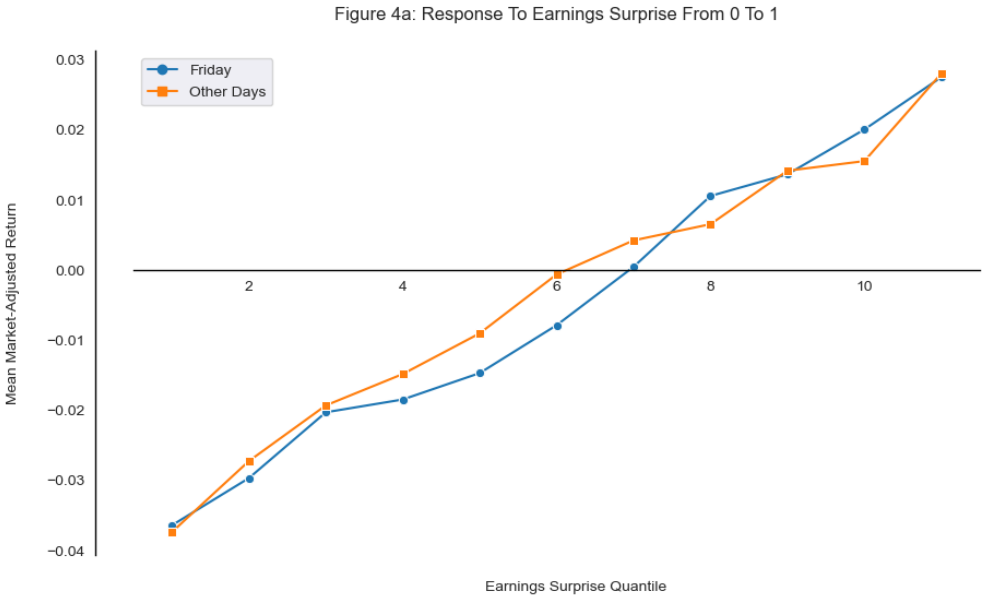


Figure 4c: Mean Market-Adjusted Return as a Response to Earnings Surprise From 0 to 1

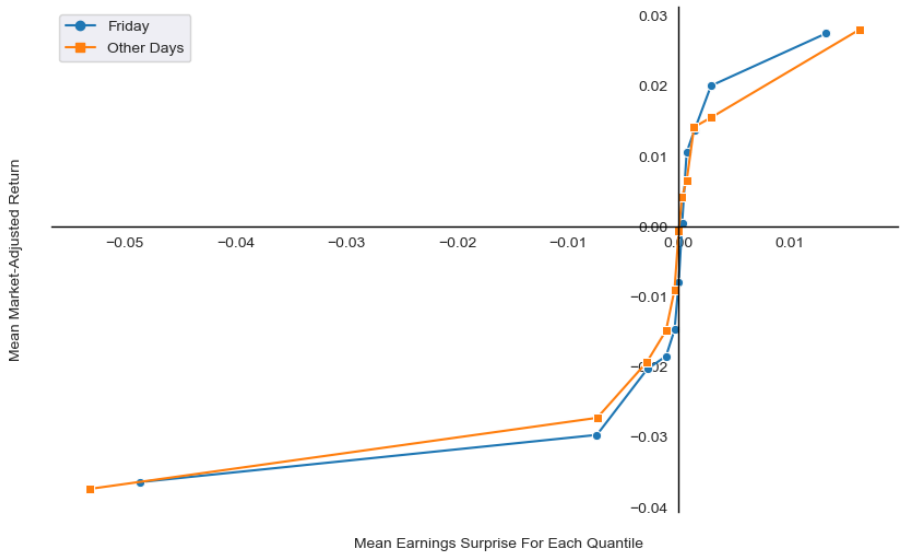


Figure 4d: Mean Market-Adjusted Return as a Response to Earnings Surprise From 3 to 75

