

# **Who Profits from Sell-Side Analyst Recommendations?**

## **Internet Appendix: Robustness Checks**

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**Table IA-1: Univariate regressions of abnormal volume surrounding analyst recommendation changes**  
**Keeping recommendation changes near EA dates and on multiple recommendation change dates in the sample.**

Table IA-1 presents univariate analyses of abnormal trading volumes in the days surrounding analyst upgrades (Panel A) and downgrades (Panel B). The dependent variable is abnormal trading volume for institutional (three left columns) or individual (three center columns) traders. Abnormal volume is defined as volume as a percent of NYSE volume on day  $t$  minus volume as a percent of NYSE volume during the benchmark period (days  $t-45$  to  $t-11$  and days  $t+11$  to  $t+45$  relative to the day of the analyst recommendation change). Day 0 is the day the analyst recommendation change is released if before 4:00 pm on a trading day, else the next trading day. Day -4 to -1 (Day +1 to +4) cumulates over day -4 to -1 (+1 to +4). Regressions include year fixed effects (coefficients not reported).  $t$ -statistics (in parentheses below parameter estimates) are based on double-clustered standard errors, clustered on stock and date.

[illegible][illegible]

**Table IA-2: Univariate regressions of abnormal trade imbalance surrounding analyst recommendation changes**  
**Keeping recommendation changes near EA dates and on multiple recommendation change dates in the sample.**

Table IA-2 presents univariate analyses of abnormal trade imbalances in the days surrounding analyst upgrades (Panel A) and downgrades (Panel B). The dependent variable is abnormal trade imbalance for institutional (three left columns) or individual (three center columns) traders. Abnormal imbalance is defined as shares bought minus shares sold as a percent of NYSE volume on day  $t$  minus shares bought minus shares sold as a percent of NYSE volume during the benchmark period (days  $t-45$  to  $t-11$  and days  $t+11$  to  $t+45$  relative to the day of the analyst recommendation change). *Day 0* is the day the analyst recommendation change is released if before 4:00 pm on a trading day, else the next trading day. *Day -4 to -1* (*Day +1 to +4*) cumulates over day -4 to -1 (+1 to +4). Regressions include year fixed effects, and  $t$ -statistics (in parentheses below parameter estimates) are based on double-clustered standard errors, clustered on stock and date.

[illegible][illegible]

**Table IA-3: Univariate regressions of abnormal volume surrounding analyst recommendation changes**  
**Excluding recommendation changes announced after 4:00 pm from the sample.**

Table IA-3 presents univariate analyses of abnormal trading volumes in the days surrounding analyst upgrades (Panel A) and downgrades (Panel B). The dependent variable is abnormal trading volume for institutional (three left columns) or individual (three center columns) traders. Abnormal volume is defined as volume as a percent of NYSE volume on day  $t$  minus volume as a percent of NYSE volume during the benchmark period (days  $t-45$  to  $t-11$  and days  $t+11$  to  $t+45$  relative to the day of the analyst recommendation change). *Day 0* is the day the analyst recommendation change is released if before 4:00 pm on a trading day, else the next trading day. *Day -4 to -1* (*Day +1 to +4*) cumulates over day -4 to -1 (+1 to +4). Regressions include year fixed effects (coefficients not reported).  $t$ -statistics (in parentheses below parameter estimates) are based on double-clustered standard errors, clustered on stock and date.

[illegible][illegible]

**Table IA-4: Univariate regressions of abnormal trade imbalance surrounding analyst recommendation changes**  
**Excluding recommendation changes announced after 4:00 pm from the sample.**

Table IA-4 presents univariate analyses of abnormal trade imbalances in the days surrounding analyst upgrades (Panel A) and downgrades (Panel B). The dependent variable is abnormal trade imbalance for institutional (three left columns) or individual (three center columns) traders. Abnormal imbalance is defined as shares bought minus shares sold as a percent of NYSE volume on day  $t$  minus shares bought minus shares sold as a percent of NYSE volume during the benchmark period (days  $t-45$  to  $t-11$  and days  $t+11$  to  $t+45$  relative to the day of the analyst recommendation change). Day 0 is the day the analyst recommendation change is released if before 4:00 pm on a trading day, else the next trading day. Day -4 to -1 (Day +1 to +4) cumulates over day -4 to -1 (+1 to +4). Regressions include year fixed effects, and  $t$ -statistics (in parentheses below parameter estimates) are based on double-clustered standard errors, clustered on stock and date.

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