Internet Appendix to *The Evolution of Financial Market Efficiency: Evidence from Earnings Announcements*

Charles Martineau*

January 31, 2019

Contents

*Martineau: University of Toronto, 105 St-George, Toronto ON, Canada, M5S 3E6 (charles.martineau@utoronto.ca).

This appendix contains supplementary material that is discussed but not reported in the main body of the paper.

A. List of Figures

Below I provide a list of all figures together with a brief description.
Figures:

- Figure IA.1 shows the median and the 10th-90th percentile range in firm size and in stock price since 1984.
- Figure IA.2 shows the evolution of post-earnings announcement drift after conditioning on random walk earnings surprises. For more details, see Section B.
- Figure IA.3 shows the explanatory power (R^2) from two unbiasedness regression using buy-and-hold returns (BHAR) [0,5] and [0,10] around earnings announcements as independent variables.

B. Post-Announcement Drifts After Conditioning on Random Walk Earnings Surprises

I examine post-earnings announcement drifts after conditioning on random walk earnings surprises. I follow Lerman, Livnat, and Mendenhall (2007) and define random walk earnings surprise as

$$Random\ Walk\ Surprises = \frac{EPS_{j,t} - \delta_{j,t} - EPS_{j,t-4}}{STD_{j,t}}, \tag{1}$$

where $EPS_{j,t}$ is the quarterly diluted earnings per share before extraordinary items for company j in quarter t. $EPS_{j,t-4}$ is the earnings per share of the same quarter in the previous year. $\delta_{j,t}$ is a drift term to allow for the company's recent historical earnings

growth. STD is the standard deviation of $EPS_{j,t} - \delta_{j,t} + EPS_{j,t-4}$ in the eight quarters prior to the earnings announcement.

Figure IA.2 shows the post-earnings announcement drifts around earnings announcements after conditioning on random walk earnings surprise by surprise quintiles for the Compustat sample stocks described in Section 1 of the main text.

The figure shows that markets have become more efficient at incorporating random walk surprises into stock prices over time. However, the figure also shows that price drifts after conditioning on earnings surprises using analyst forecasts are different than random walks. I find that pre-announcement drifts, returns on announcement days, and post-announcement drifts are substantially larger when conditioning on earnings surprises using analyst forecasts.

C. References

Lerman, Alina, Joshua Livnat, and Richard R. Mendenhall, 2007, Double surprise into higher future returns, *Financial Analysts Journal* 63, 63–71.

D. Figures and Tables

Figure IA.1. Sample Firm Size and Stock Price

This figure shows the median (solid black line) and the 10th-90th percentile range (shaded area) in firm size measured by stock market capitalization and in stock price from 1984 to 2015 for S&P 1500 and non-S&P 1500 firms. The sample consists of U.S.-based firms with at least one earnings forecast in I/B/E/S with accounting data in Compustat, specifically, total assets and market capitalization, at the end of December of the previous calendar year.

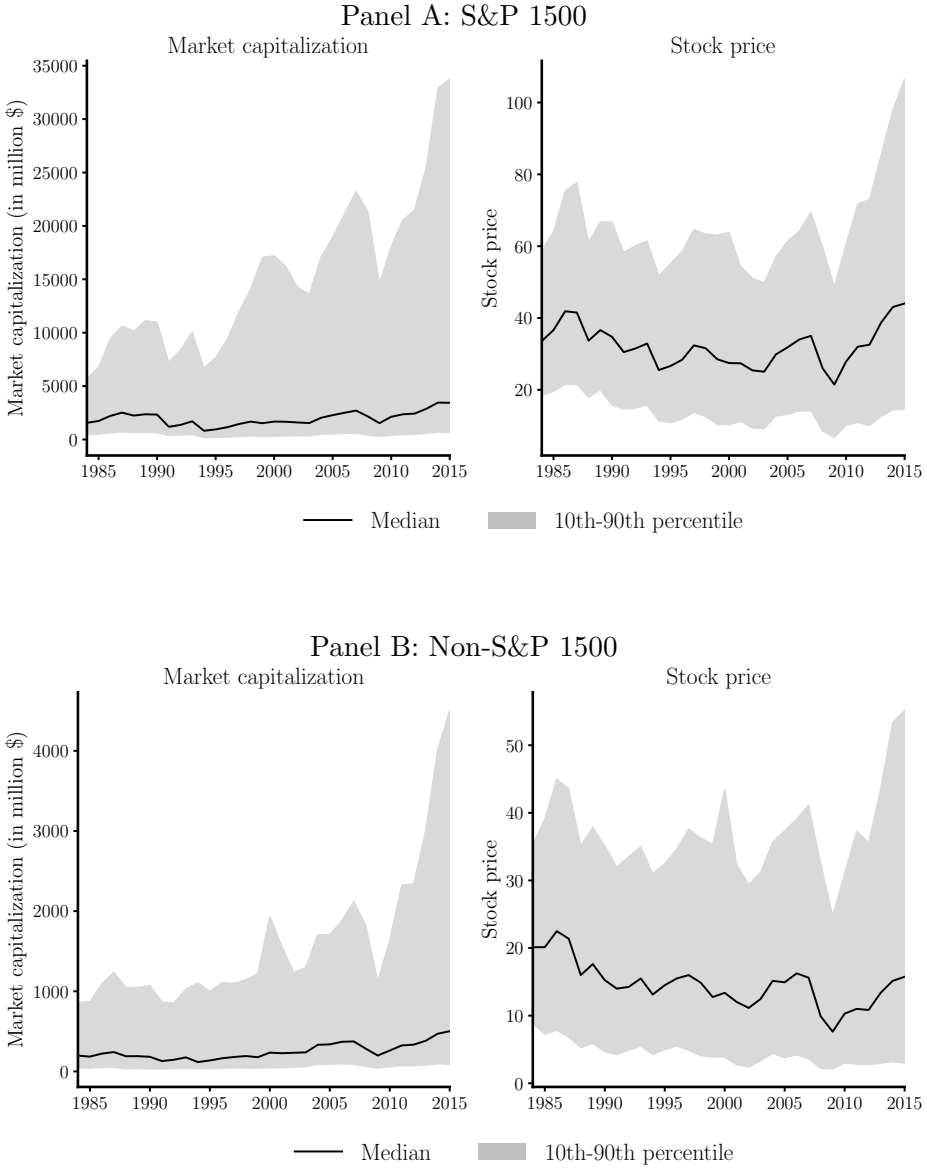

Figure IA.2. The Evolution of Post-Earnings Announcement Drift After Conditioning on Random Walk Earnings Surprises

This figure shows the average buy-and-hold abnormal returns (BHAR) around earnings announcements for each random walk earnings surprise quintile sort for different time periods. The random walk earnings surprise is defined in Equation (1). I define BHAR for stock announcement i from day τ to T ($\tau < T$) as

$$BHAR[\tau, T]_i = \prod_{k=\tau}^{T}(1 + R_{i,k}) - \prod_{k=\tau}^{T}(1 + R_{p,k}),$$

where $R_{i,k}$ is the return on the stock-announcement i and $R_{p,k}$ is the return on the size and book-to-market matching Fama-French portfolio on day k. This figure represents the BHAR[-10, T] from ten days before the announcement ($\tau = -10$) to day T, where T varies from $T = -9$ to $T = 60$ trading days. Day $T = 0$ is the BHAR of the earnings announcement date reported in I/B/E/S and the following trading day. I combine both trading days because I do not have the exact earnings announcement timestamp. The shaded area represents the pointwise 95% confidence bands around the average BHAR. The vertical line corresponds to the earnings announcement day. The sample period is from January 1, 1973 to December 31, 2015.

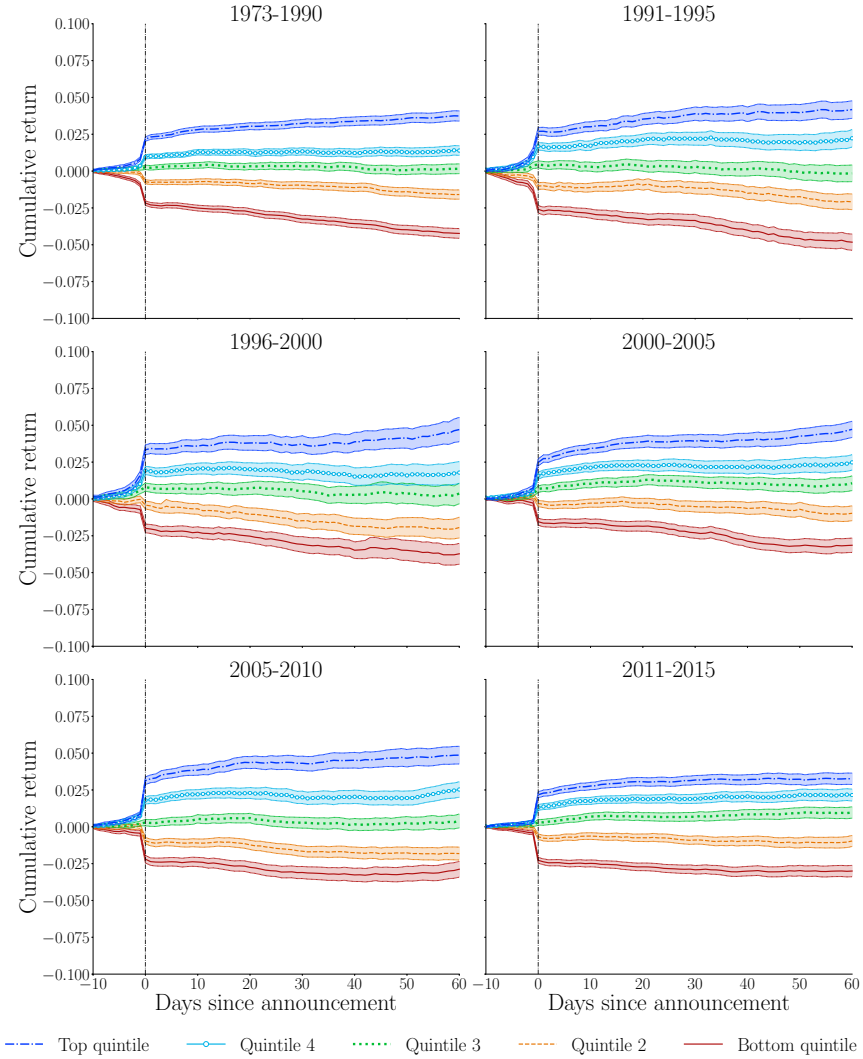

Figure IA.3. The Evolution of Post-Earnings Announcement Drift After Conditioning on Random Walk Earnings Surprises

This figure shows the explanatory power (R^2) of the following 2-year rolling regressions:

$$BHAR[0,61]_{i,t} = \alpha + \beta BHAR[0,5]_{i,t} + \varepsilon_{i,t} \text{ in Panel A and}$$
$$BHAR[0,61]_{i,t} = \alpha + \beta BHAR[0,10]_{i,t} + \varepsilon_{i,t} \text{ in Panel B,}$$

where BHAR is the buy-and-hold abnormal returns around earnings announcements i announced on day 0. See Figure 3 for the definition of BHAR. Above each plot is a linear time trend τ (red dotted line) with p-value based on Newey-West standard errors with five lags. The sample period is from January 1, 1977 to December 31, 2015.