



Research Article

Keeping It Simple: How Post-earnings Return Drift Can Exist and Not Exist Simultaneously

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Abstract

Some authors use 18 quadrillion regressions to conclude that post-earnings announcement drift (PEAD) is a major factor in the stock market. Some other authors find strong evidence of PEAD with t-statistics exceeding 14. However, at least one author argues that earnings drift does not exist in equities. This paper tries to resolve this conflict by replicating the procedure to generate the earnings drift factor, and indeed finds that earnings drift does not exist in all but microcaps. It stands to reason that for the bulk of market capitalization, there is no earnings drift. It is also shown that some conclusions relating to the significance of PEAD arise from using non-standard methods and interpretations.

Keywords

Factors, Risk Premia, Stock Return

1. Introduction

“In recent years, earnings surprises fail to predict post-announcement returns and price discovery generally occurs all on the announcement date.” –Martineau [16].

“In particular, there is strong evidence for including two tradable factors, PEADB and PEAD (i.e., respectively, the bond and equity post-earnings announcement drift factors), as a source of priced risk in the SDF.” –Dickerson et al. [3].

“The coefficient for SUE [standardized unexpected earnings] is positive and significant, consistent with the previous literature that stock prices tend to react positively to positive earnings surprises and negatively to negative surprises.” –Hirshleifer et al. [11].

The puzzle I pose is: how can all the above quotes be true? How can post-earnings drift (PEAD) swing from being irrelevant to being a “strong” factor in equities? More generally,

does post-earnings drift exist in financial markets? Specifically, is there return predictability following earnings surprises, consistent with the signs of these surprises?

Indeed, since the discovery of PEAD in Bernard and Thomas [1], among others, the controversy surrounding this key anomaly has persisted for a long time. Martineau [16] appeared to put this controversy to rest when he documented that no evidence of PEAD could be found in non-microcap stocks starting in 2001.

Nevertheless, in two recent papers, Dickerson, Julliard, and Mueller [3] and Hirshleifer, Peng, and Wang [11] find strong evidence of post-earnings drift.¹ Dickerson et al. [3] run 18 quadrillion regressions (combinations of various factor models) and uncover that PEAD emerges as a strong factor. Hirshleifer et al. [11] find that PEAD is priced with a t-statistic of 15 and propose that

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Received: 19 February 2026; Accepted: 28 February 2026; Published: 14 March 2026



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social connections in the county where the firm is located influence the strength of PEAD.

In this paper I try to resolve the discrepancy across the preceding three papers. Note that this is not a paper about replication. Indeed, as far as I can see, the papers replicate fine. Rather, my paper is about the pervasiveness of PEAD or lack thereof. The issues surrounding PEAD become more murky because the initial signal can be computed based on earnings relative to consensus earnings forecasts, earnings relative to those implied from past earnings, and the abnormal return around days contiguous to earnings announcements. We will see that all these issues play a role in my paper.

I want to emphasize that my comment is only about PEAD as a factor. Dickerson et al. [4], Dickerson et al. [5], Fama and French [6, 7, 9], Jegadeesh [13], Jegadeesh and Titman [14] propose various other factor models for bond and equity markets. Jensen et al. [15] show that these other factors are mainly robust.

2. The Issue Surrounding Dickerson et al [3]

The primary issue here is simply whether or not one screens for microcaps,² and whether or not one allows for increased arbitrage in the post-January-2001 (post-decimals) regime. To show this I first note that Dickerson et al. [3] use an off-the-shelf earnings factor first computed by Daniel, Hirshleifer, and Sun [2]. [3] This factor is a long-short portfolio based on abnormal returns around earnings announcement days. Specifically it involves dividing into two groups based on market cap and then into three groups by the “4-day cumulative abnormal return around the most recent quarterly earnings announcement dates.” The return on the earnings factor is simply the average of the next-month returns across the extreme earnings-announcement-return sorts across the size groups. Notably, the factor does *not* exclude microcaps.

Table 1. The Daniel, Hirshleifer, and Sun [2] earnings factor.

PEAD factor	Mean	Median	S.d.	t
Feb 2001- Dec 2024 (all)	0.28	0.27	2.17	2.18
Feb 2001-Dec 2024 (excluding microcaps)	0.19	0.24	2.25	1.43

In my paper, this earnings factor is reconstructed, both including and excluding microcaps (the bottom 20% of stocks computed via NYSE breakpoints).³ The time period used is February 2001 to December 2024, the latest years post-decimalization. Note that the length of this period is far higher than that in the original Bernard and Thomas [1] PEAD paper, which uses the 1974-1986 period. I report summary statistics for this factor in Table 1.

As can be seen, there is no evidence of post-earnings drift in the non-microcap sample. The t-statistic is 1.43, and a so-called “A journal” is unlikely to find this direct and simple evidence persuasive if presented as is. Even for the microcap included sample, the t-stat is at 2.18 (barely over the threshold). Since even the first moment of earnings drift (the reward) is not significant for top 97% of stocks by market capitalization (cf. Footnote 2), it is difficult to argue that the reward to risk ratio of this variable is economically meaningful. It seems safe to argue that the PEAD factor in Dickerson, Julliard, and Mueller [3] and Daniel, Hirshleifer, and Sun [2] is not robustly priced in the most recent twenty-three years.

One issue I bring to fore is the dangers of using off-the-shelf factors without an understanding of how they are constructed. The Daniel, Hirshleifer, and Sun [2] factor is subject to controversies beyond the microcap issue. Specifically Hou, Mo, Xue, and Zhang [12] argue that it is constructed in a non-standard way, being based only on abnormal returns around earnings, and not on accounting earnings surprises. PEAD

based on accounting surprises is shown not to survive microcaps in Martineau [16], and I show in Table 1, in effect, that even the abnormal return measure does not survive microcaps. Therefore, regardless of the methods used to compute PEAD, overall, there is no evidence of PEAD in all-but-microcaps in the period following the year 2000.

3. The Issues Surrounding Hirshleifer et al [11]

Turning now to the Hirshleifer, Peng, and Wang [11] paper, they also do not screen for microcaps (see their p. 891); however, they use a non-standard pooled time-series and cross-sectional (panel) method (*not* standard Fama and MacBeth [10] regressions) to document that PEAD has a t-statistic of 14. First, a digression: Even though Daniel, Hirshleifer, and Sun [2] uses an earnings factor constructed solely from abnormal returns around earnings announcements (their “earnings surprise is measured as the 4-day cumulative abnormal return around the most recent quarterly earnings announcement date”), Hirshleifer, Peng, and Wang [11] states that “[w]e define SUE as the decile rankings of standardized unexpected earnings, which is the split-adjusted actual earnings per share minus the same-quarter value from the year before, scaled by the standard deviation of this difference over the previous eight quarter,” which is a completely different methodology.

This discrepancy should be noted.

Now, the Hirshleifer, Peng, and Wang [11] hypothesis is that post-earnings drift for firms [CAR(+2,+61) following earnings] headquartered in counties with better social connections measured via FaceBook (CEN) have lower drift (more efficient) so CEN*SUE should be negative in Panel C of their Table 2.⁴ However, the variable of interest CEN*SUE does *not* survive in columns (3), (6), and (9),⁵ of their Table 2 Panel C, though it survives in other columns.⁶

Why the effect fails in some columns is key to resolving the puzzle. Why is CEN*SUE insignificant in column (3) of their Table 2 Panel C for example?⁷ Because column (3) is the one that contains the interactions of SUE with *other* controls. The most obvious control is SUE*Size. Larger firms have lower drift, and not surprisingly this accounts for CEN. Indeed, the t-statistic on this SUE*Size variable in their appendix Table S1 is -5. Note also that SUE itself is insignificant in Panel B of their Table 2, column (3) and only marginal in Panel C column (3). Hence, there is no robust evidence of PEAD being influenced by networks net of the market cap effect (nor is there robust evidence of PEAD itself across all the panels), so the paper's findings are not persuasive.

Parenthetically, note from their Table 1 that their Table 2 dependent variable CAR (2,61) has a mean of -0.74, a median of -1.73, a standard deviation of (astonishingly) 26.98, and a skewness of 12.23. Given this, it seems reasonable to expect a portfolio sort. But the paper only has a linear regression with CAR (2,61) as a dependent variable (susceptible to outliers).

Overall, it is curious that even after the publication of literature that PEAD does not survive microcaps and is largely insignificant post-decimals (Martineau [16]), we continue to have papers that prominently state significance of PEAD, without acknowledging the issue.

4. Conclusion

Basic robustness checks, and sensible methods are desirable in research. Issues such as choice of asset pricing methods, lags used in applications of Newey-West, regression controls, should all be clearly described in published papers, and reasonable alternatives should be checked prior to going to the galleys. Further, off-the-shelf factors should be clearly elucidated and described even in the papers they are used, and it should be ensured they are appropriate for the purposes of the specific research being conducted. I suggest with due humility that the journal process is not for vita-building but to sate intellectual curiosity, in a reasonably reliable way.

Abbreviations

CAR	Cumulative Abnormal Returns
CEN	Network Centrality Parameter
PEAD	Post-earnings Announcement Drift
SUE	Standardized Unexpected Earnings

Author Contributions

Avanidhar Subrahmanyam: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Resources, Software, Validation, Visualization, Writing – original draft, Writing – review & editing

Conflicts of Interest

The author declares no conflicts of interest.

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1 Neither of these papers cite the prior paper of Martineau [16].

2 Microcaps are defined by Fama and French [8] as stocks below the 20th percentile of the NYSE market capitalization cutoff. As they point out: “microcaps are on average only about 3% of the market cap of the NYSE-Amex-NASDAQ universe, [but] they account for about 60% of the total number of stocks...” 3The time-period spanned by Dickerson et al. [3] is 1986–2022.

3 These versions of the factor are available at <https://tinyurl.com/3y42uk54>

4 Panels A and B include days immediately contiguous to the earnings announcement, and do not represent true PEAD.

5 These columns include different measures of centrality.

6 The time-period in Hirshleifer, Peng, and Wang [11] is 1997–2016.

7 Separately, it is unusual for a paper in which the central coefficient is insignificant in several columns to be published in a so-called “A journal.”