

Who, if Anyone, Reacts to Accrual Information?

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Overview

- **Objectives:**
 - Can accruals add information beyond earnings?
 - Is investors' net buying behavior consistent with accrual information?

Overview (Continued)

- **Methodology:**

- Extension of Collins and Hribar (2000)

- Only firms covered by analysts
- Exact SEC filing dates
- Elimination of firms that disclose net operating cash flow in their preliminary earnings announcements

- Trading behavior of small and large traders around SEC filings

- Is large traders' net buying behavior around SEC filings consistent with accrual information?

Overview (Continued)

- **Results:**

- Trading on accruals is incrementally profitable to trading on earnings surprises.
- A strategy that takes positions according to extreme earnings surprises and unwinds them when accruals provide conflicting signals is even more profitable.
- Large traders seem to trade according to the accrual signal around SEC filings, but only when the initial earnings surprise is non-negative.
- Small traders seem to trade *contrary* to the accrual signal.

Data Acknowledgements

- Charter Oak Investment Systems Inc. for providing the preliminary and original *Compustat* quarterly data.
 - <http://www.charteroaksystems.com/>
- S&P's Compustat for SEC filing dates.
- Thomson Financial for providing earnings forecasts available through the Institutional Brokers Estimate System.

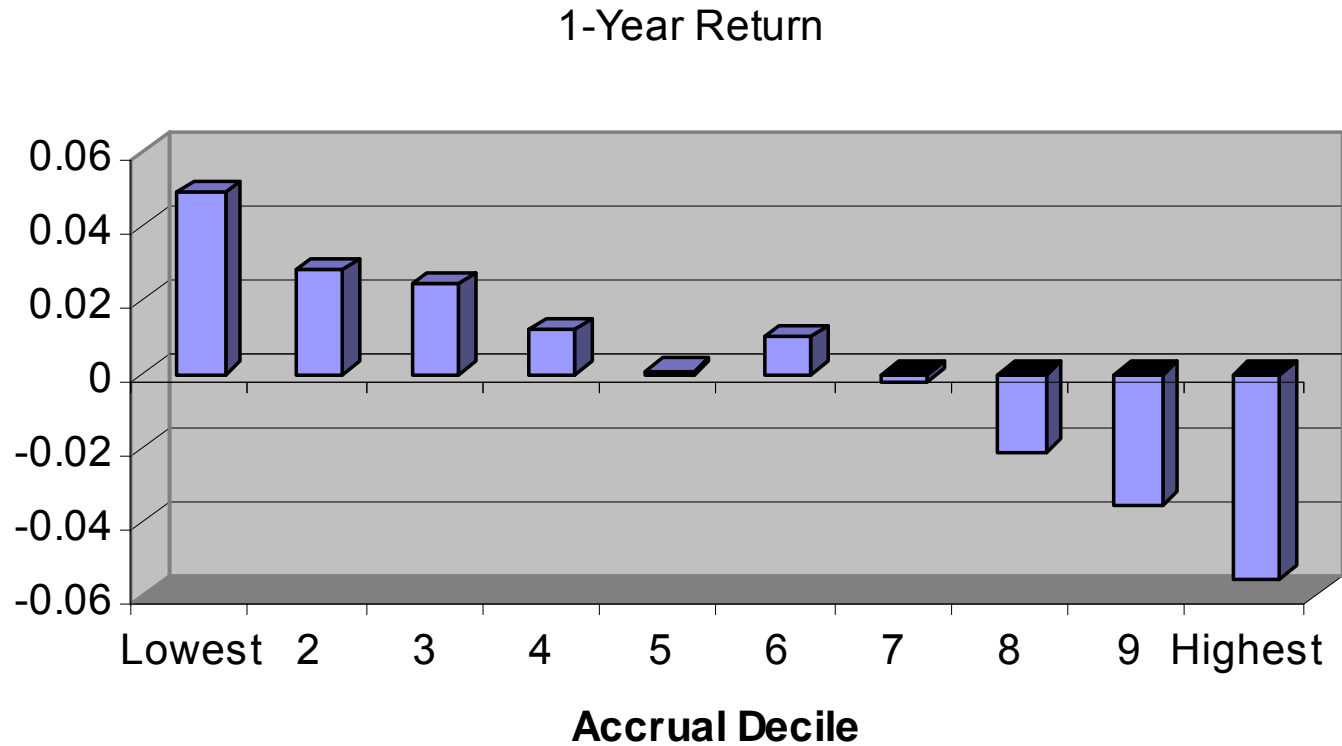
Definitions

- $\text{Accruals} = \text{Net Income} - \text{Net Operating Cash Flow}$.
 - Represents investments in net current assets (such as inventories and receivables), as well as adjustments for accounting items that are not cash items (such as depreciation and deferred taxes).
- Accruals are typically negative; net income is after depreciation whereas net operating cash flow is not.

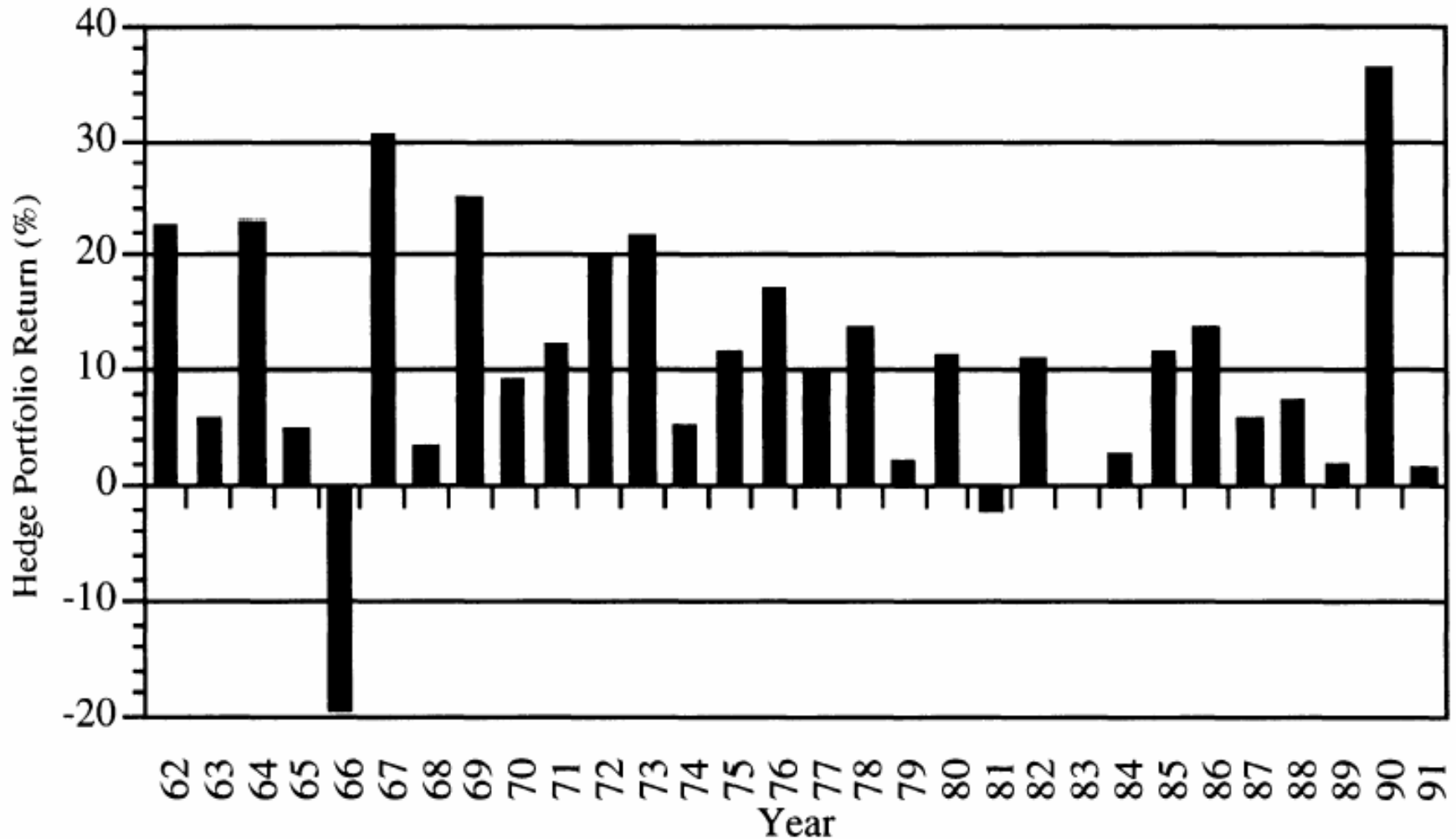
Intuition

- Investors are “fixated” on earnings.
- Managers can affect earnings by increasing accruals (thus, leading to higher earnings), or decreasing accruals (lower earnings).
- Accruals tend to reverse – the game can last for a limited time.
- When accruals reverse, earnings are affected in the opposite way.

Sloan (1996) – Accrual Anomaly

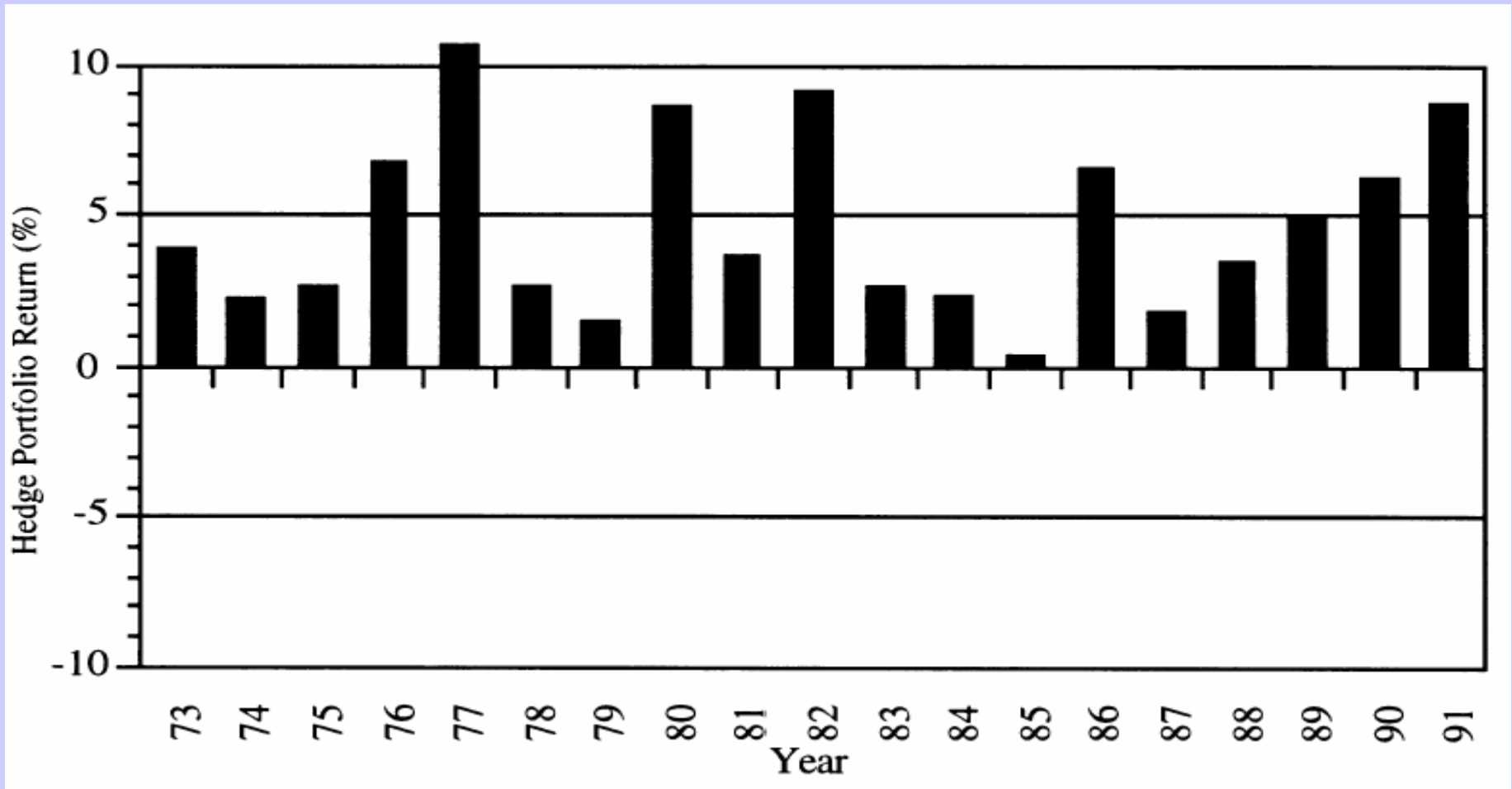


Sloan (1996) – Accrual Anomaly



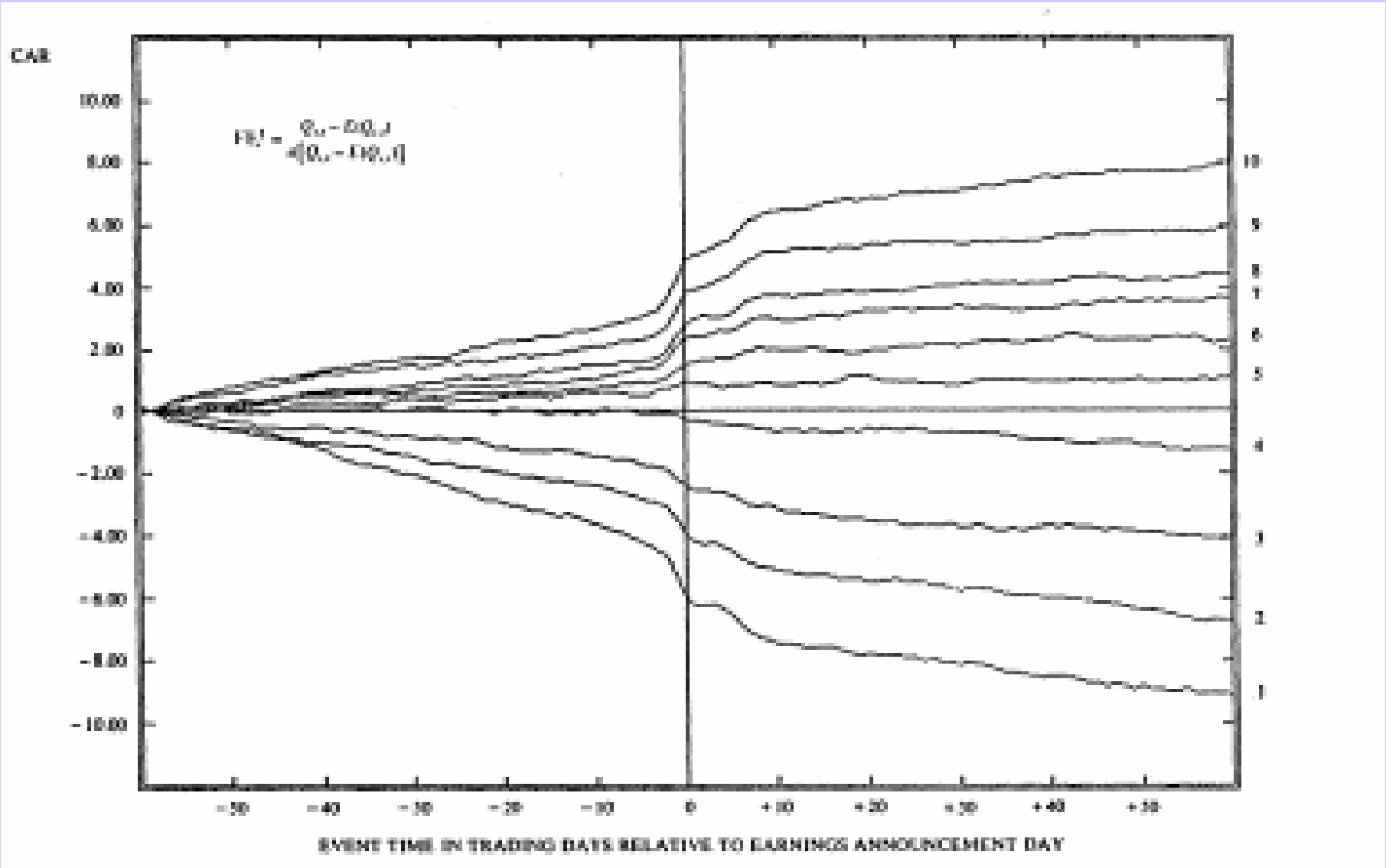
Only two years of negative returns. Probably not driven by additional risk.

Sloan (1996) – Accrual Anomaly

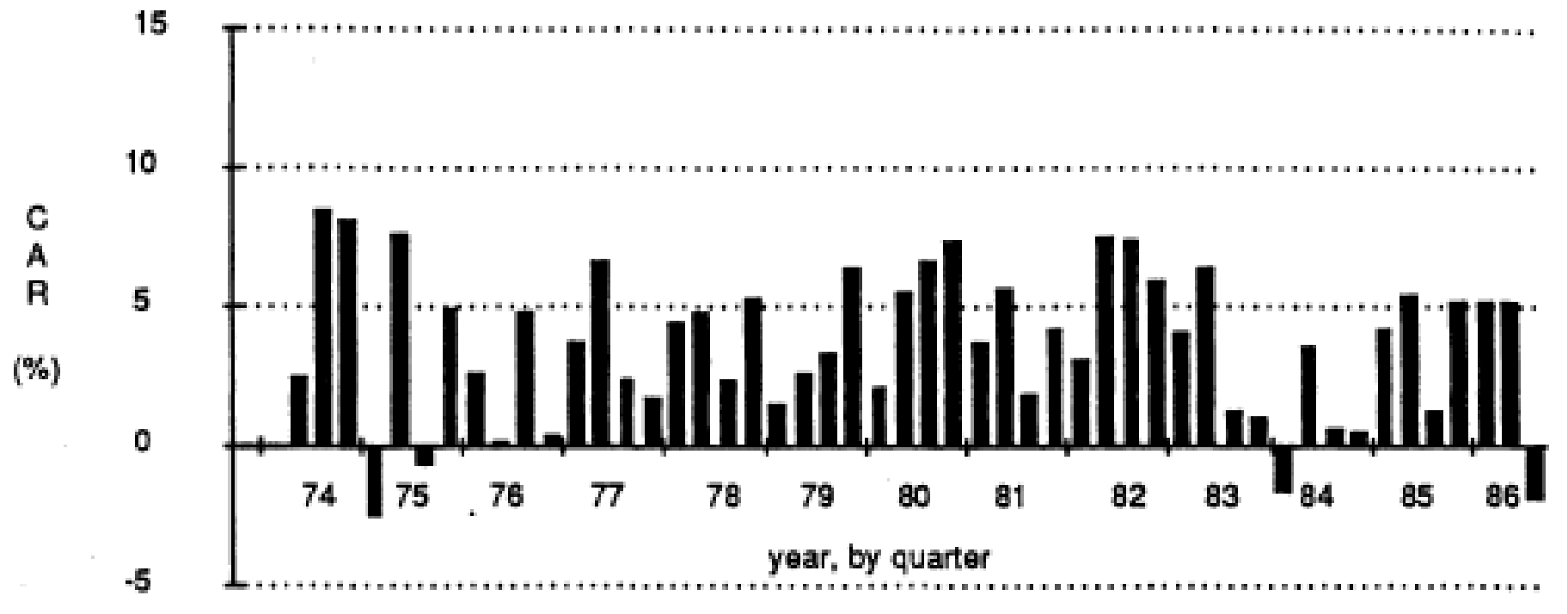


Earnings Announcement Returns – Window is (-2,0) – Sum of four quarterly announcements

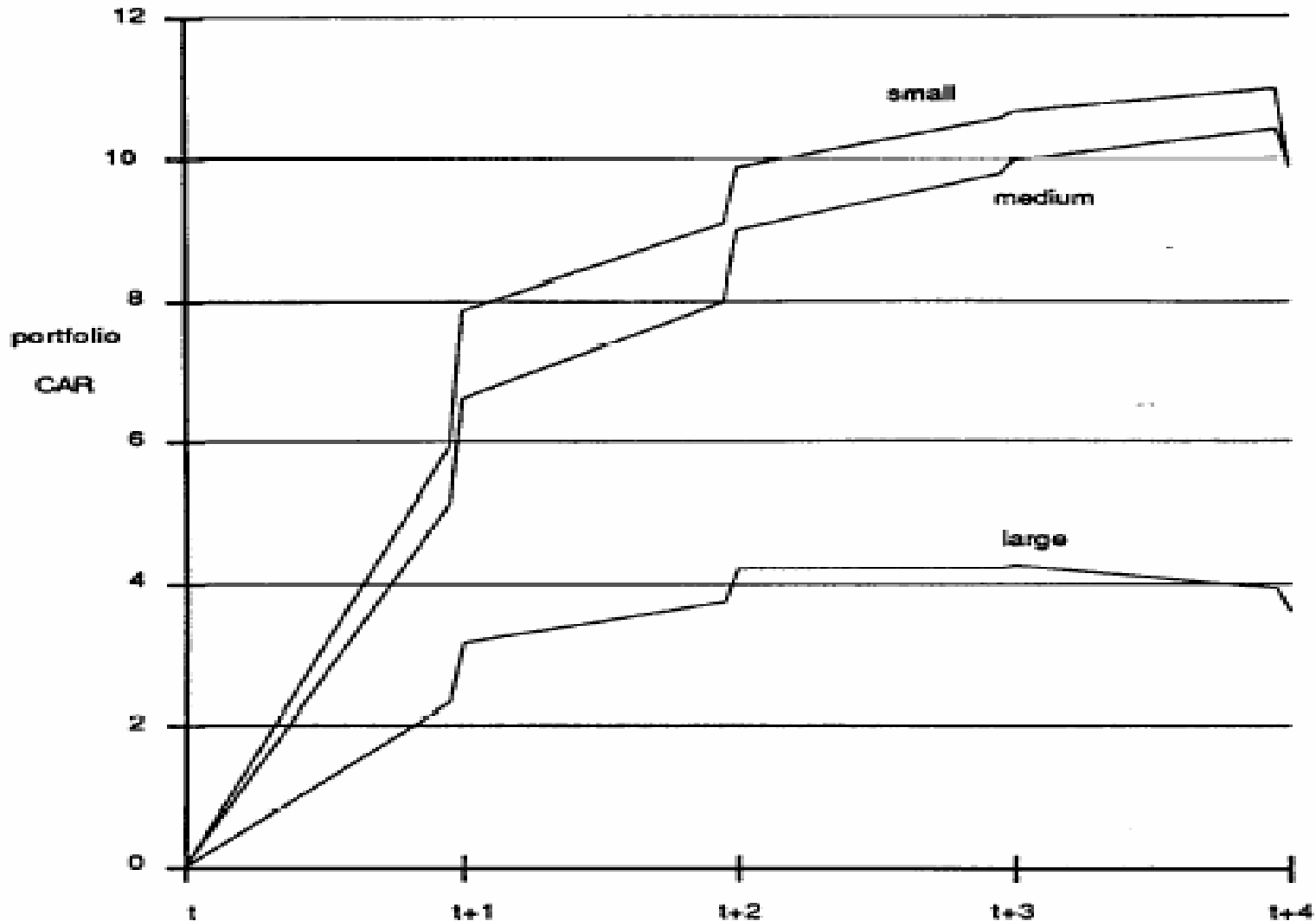
Foster, Olsen & Shevlin (1984) – PEAD



Bernard & Thomas (1989) – PEAD



Bernard & Thomas (1990) – PEAD



Announcement date of subsequent quarter, relative to announcement of quarter t

Collins & Hribar (2000) – PEAD

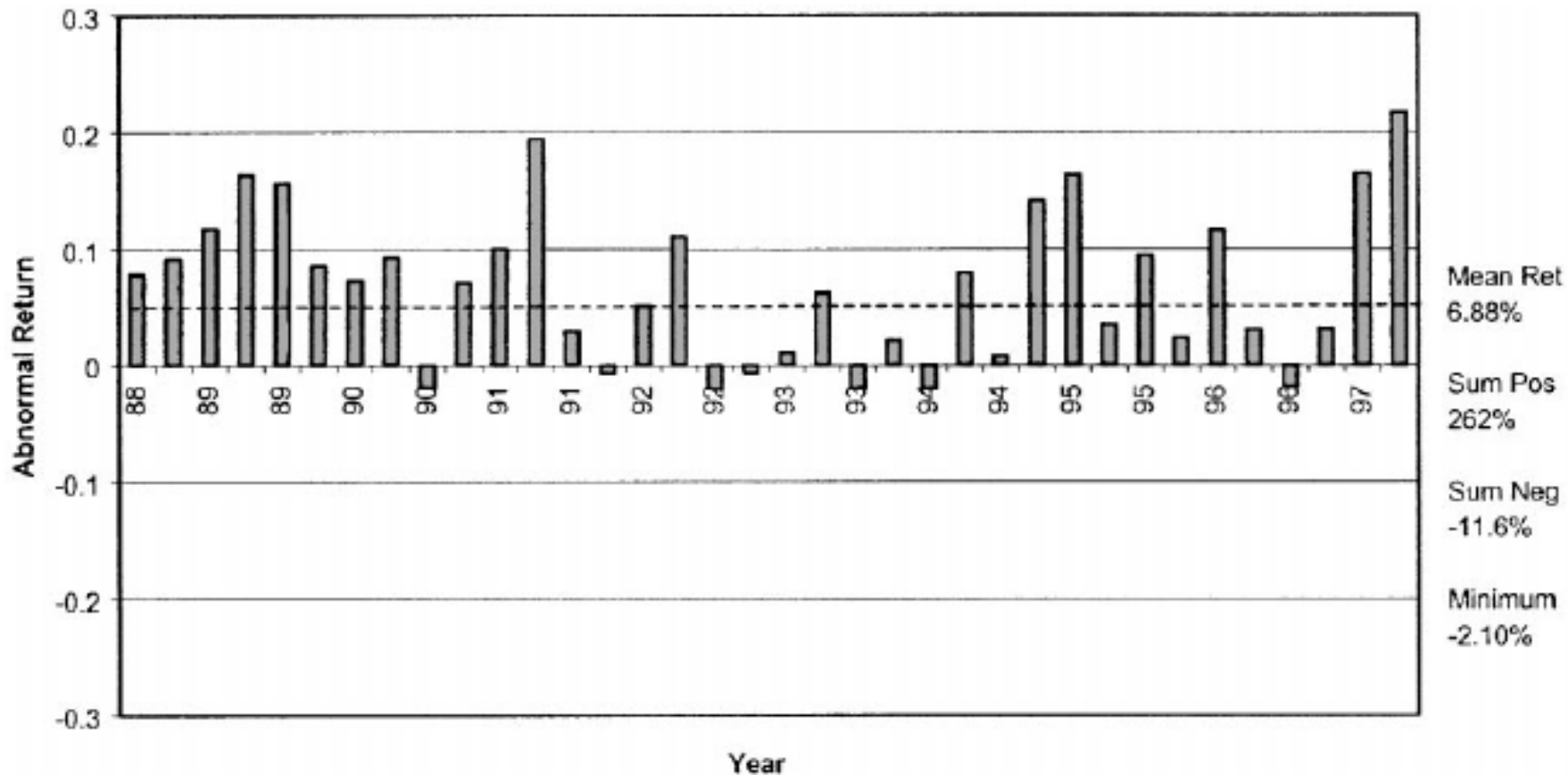


Fig. 1. Two-quarter abnormal returns to a strategy taking a long (offsetting short) position in firms with the largest positive (negative) unexpected earnings. Based on 36 quarters over the years 1988–1997.

Collins & Hribar (2000) – Accruals

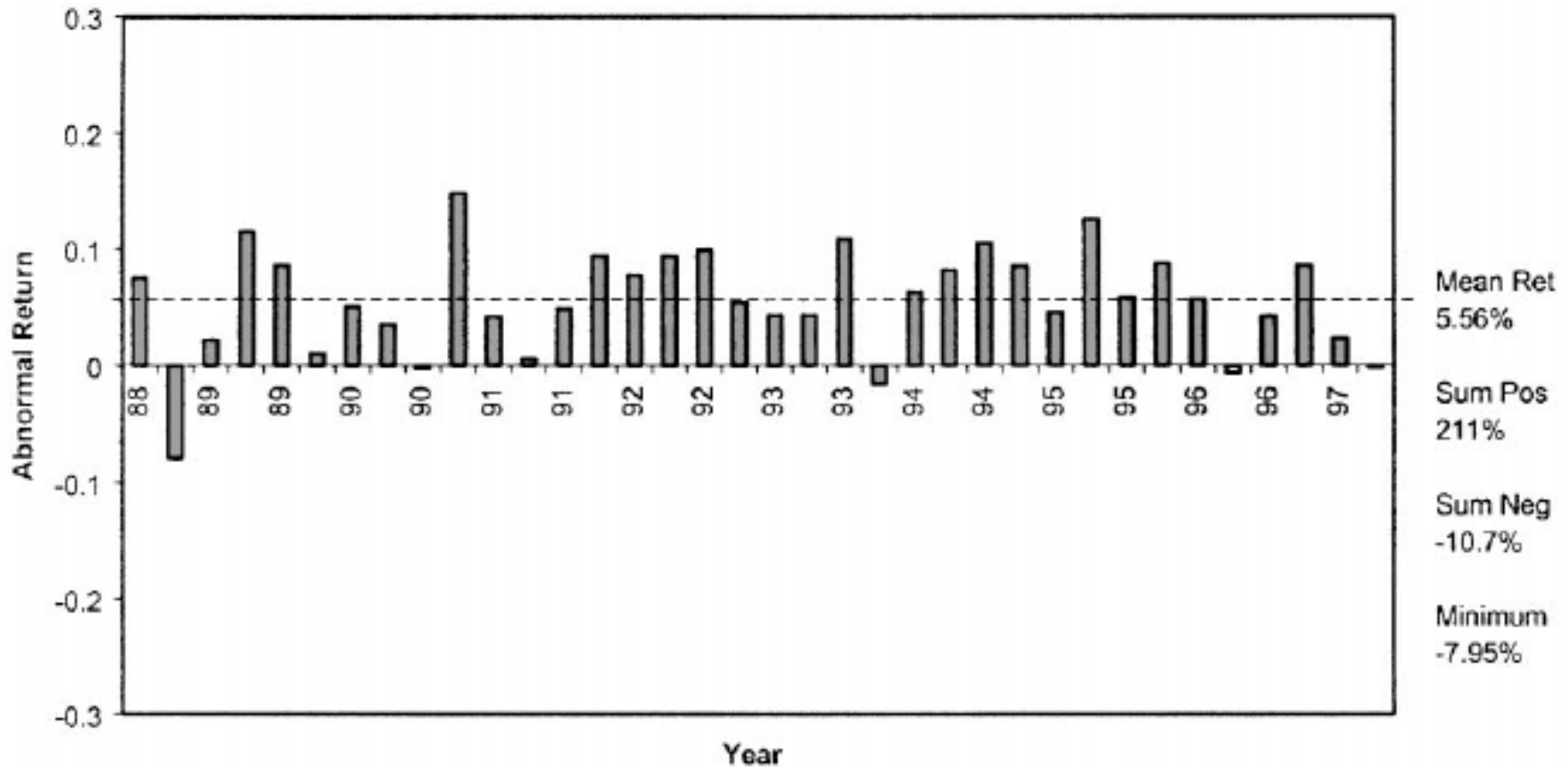


Fig. 2. Two-quarter abnormal returns to a strategy taking a long (offsetting short) position in firms with the largest income increasing (income decreasing) accruals. Based on 36 quarters over the years 1988–1997.

Collins & Hribar (2000) Combining PEAD and Accruals

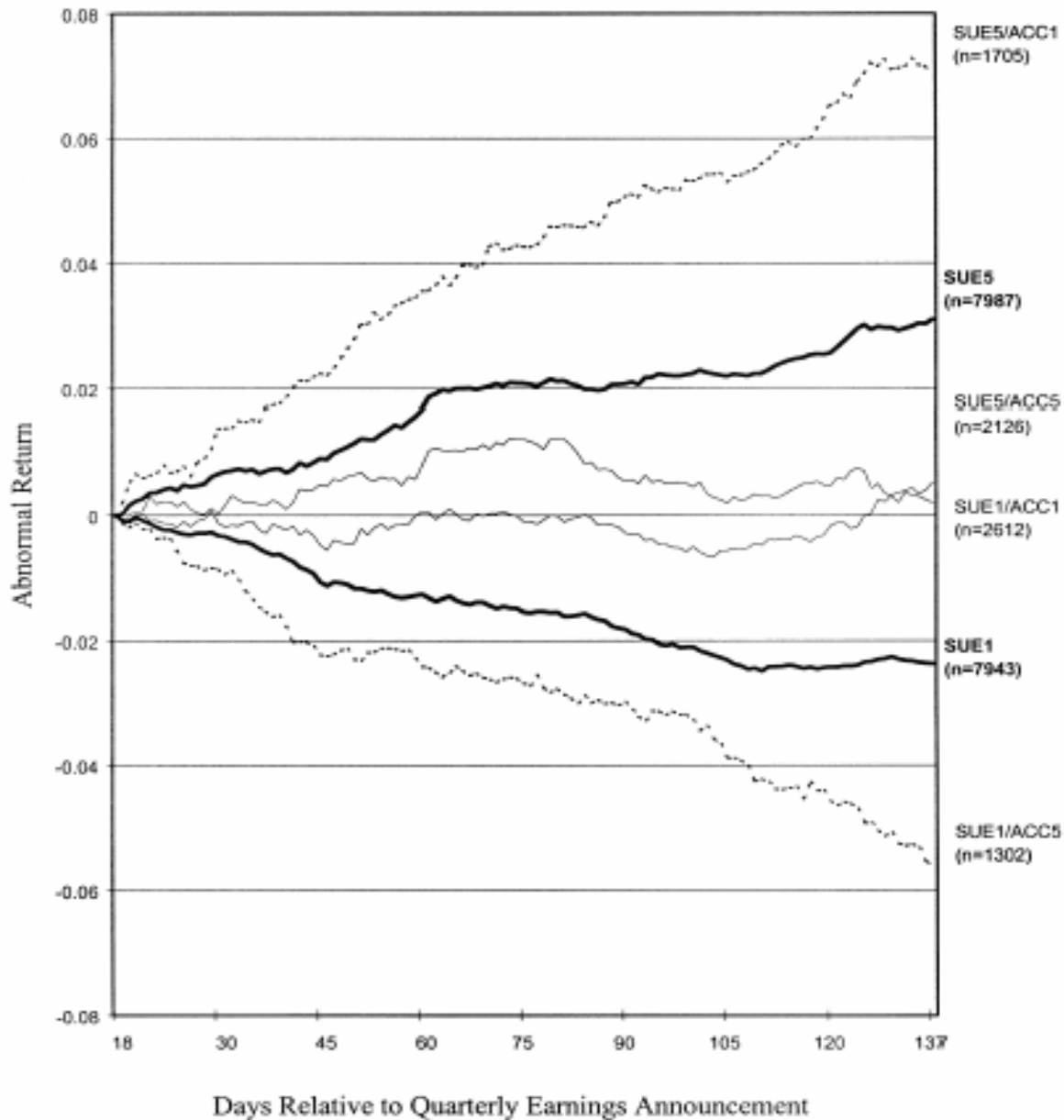
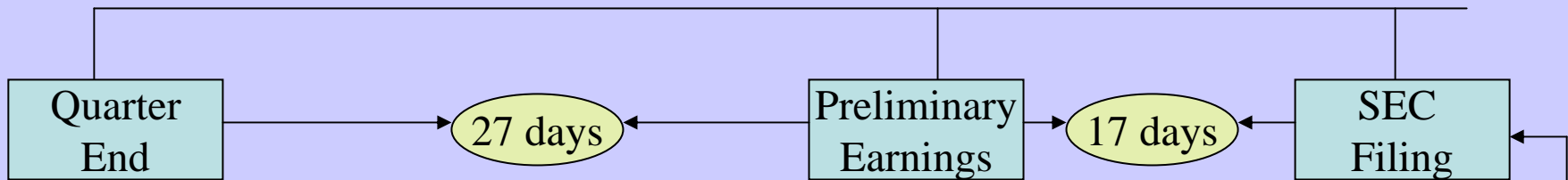


Fig. 3. Abnormal returns for extreme *SUE* and joint *SUE* and *Accrual* quintiles for a fixed 120-day window. Quintile classifications are based on an overall sample of 41,237 firm quarters spanning the years 1988–1997.

You can improve on PEAD (long position in SUE5) by selecting the subset with low accruals (ACC1).

It reduces the number of firm-quarters considerably (7,987 to 1705), but yields a much greater abnormal return.

Institutional Considerations



- Most firms announce *preliminary earnings* after quarter-end, but do not disclose net operating cash flow in this announcement.
- Firms then file their 10-Q/10-K Forms with the SEC, which include *net operating cash flows*.
 - Easton and Zmijewski (1993) and Griffin (2003) show that most firms file on the last day or two of the allowed period.

Research Design Issues

- Earnings are typically known before accruals. Most firms disclose accruals only in their SEC filings.
- SEC filing dates are not in the Compustat database.
- Bartov et al (2000) show that firms with high levels of institutional investors have lower drift.
Collins et al (2003) show similar results for accruals.
Which firms should be studied?

Collins and Hribar (2000)

- Assume accruals become known 17 days after the preliminary earnings announcement.
 - In our sample, accruals become known within 17 days after the preliminary earnings for only about **26%** of the observations.
- Use a time-series forecast for earnings surprises.
 - The drift is smaller for firms covered by analysts when time-series forecasts are used instead of analyst forecasts (Livnat and Mendenhall, 2006).
- Use a holding period of two quarters.

Our Research Design

- Precise SEC filing dates.
- Only firms covered by analysts.
- Only firms with at least 3 days between preliminary earnings announcements and SEC filings.
- Limited to firms that did not disclose net operating cash flow in the preliminary earnings announcement.

Advantages

- Can examine accruals as a separate signal from earnings.
- Focus on firms which are more likely to be held by professional investors.
- Can assess whether accrual information is used by traders when it is disclosed.

Two-Stage Study

- Show that accruals are value-relevant after earnings are known.
 - Trading gains when using accruals in addition to earnings:
 - Replicating and extending Collins and Hribar (2000).
 - Showing that unwinding extreme earnings positions in light of conflicting accrual signals can yield even greater trading gains.
- Examine the net buying behavior of small and large traders when accruals become known.
 - Battalio and Mendenhall (2005) show that small traders react to earnings surprises based on seasonal random walk forecasts, whereas large traders to those based on analyst forecasts.

Sample Selection

- Preliminary earnings announcement date at least three days prior to the SEC filing date. Net operating cash flow not disclosed in the preliminary earnings announcement.
- At least one forecast on I/B/E/S for quarterly earnings during the 90-day period prior to the preliminary earnings announcement.
- Market value and average total assets of at least \$1 million.
- Availability of data to calculate earnings surprises.

Earnings Surprises

- Time-Series: (using prior 8 quarters of adjusted EPS)

$$SUE_{j,t} = \frac{E_{j,t} - \delta_{j,t} - E_{j,t-4}}{STD_{j,t}}$$

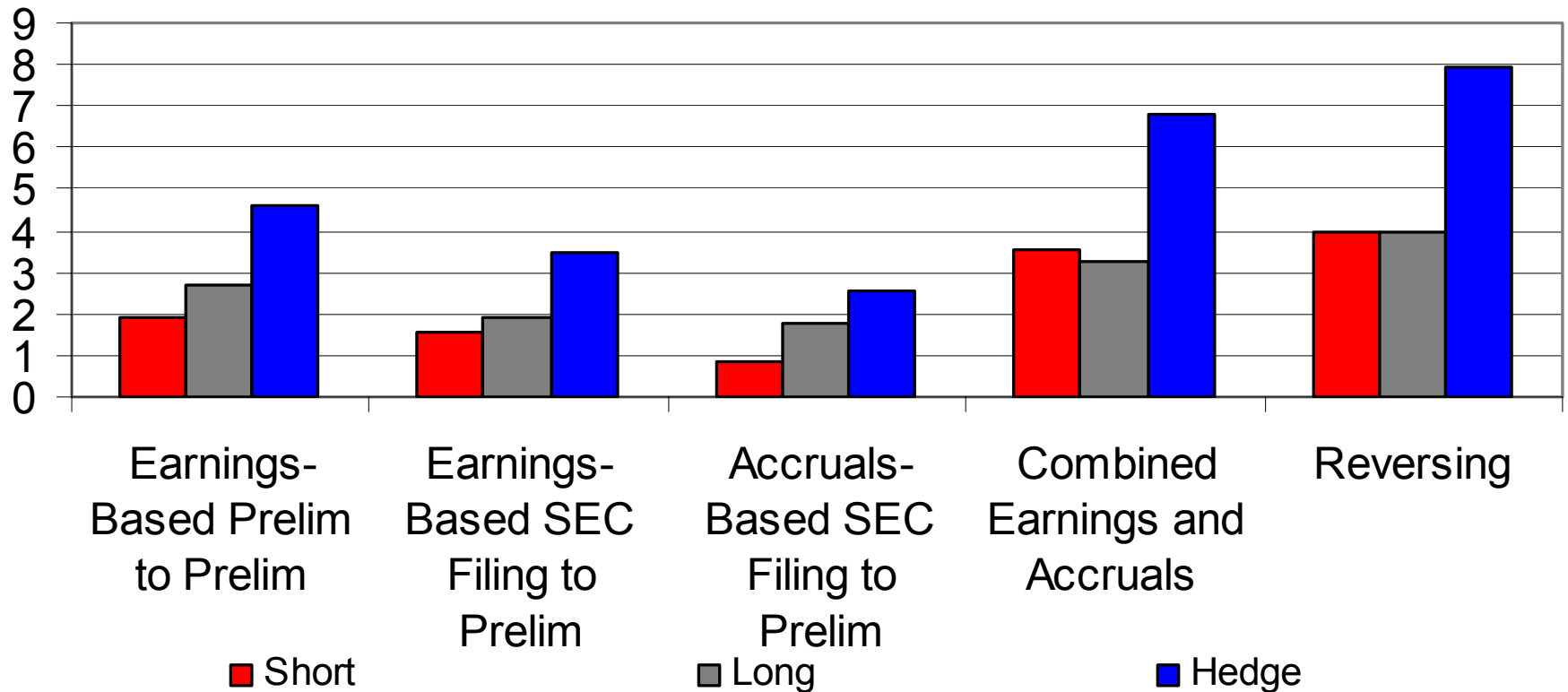
- Analyst Forecasts:

$$SUEAF_{j,t} = \frac{E_{j,t}^{ibes} - F_{j,t}}{P_{j,t}}$$

Accruals and Abnormal Returns

- Accruals as in Collins and Hribar (2000):
 - Quarterly net income before extraordinary items minus quarterly net operating cash flow, scaled by average total assets during the quarter.
- Buy & Hold Returns (BHR) minus BHR on the Fama and French portfolio with similar size and B/M (6 groups).
 - From 2 days after an information event date (preliminary earnings or SEC filing) through one day after the next quarter's preliminary earnings.

Average Quarterly B&H Excess Returns



Based on Table 2

Conclusions from Market Tests

- The accrual anomaly persists incrementally to the SUEAF strategy for firms followed by analysts and using precise SEC filing dates.
- One can improve trading gains by using the SUEAF strategy as of the preliminary earnings announcement and then unwinding positions if accruals exhibit conflicting signals.

Net Buying Behavior

- Use the Lee and Ready (1991) algorithm to classify trades obtained from the NYSE's TAQ database as buyer- or seller-initiated trades.
 - If the transaction price is above (below) the midpoint of the execution-time bid and offer it is classified as buyer- (seller-) initiated.
- Compute the number of buy and sell transactions in a 3-day window centered on an event date for six bin sizes, ranging from less than 500 shares (small traders) through more than 5,000 shares (large traders).

Net Buying Behavior (Cont.)

- Compare the event date net buying behavior in a particular size bin to the average of net buying behavior in two 3-day windows before and after the event period.
- The measure is scaled:

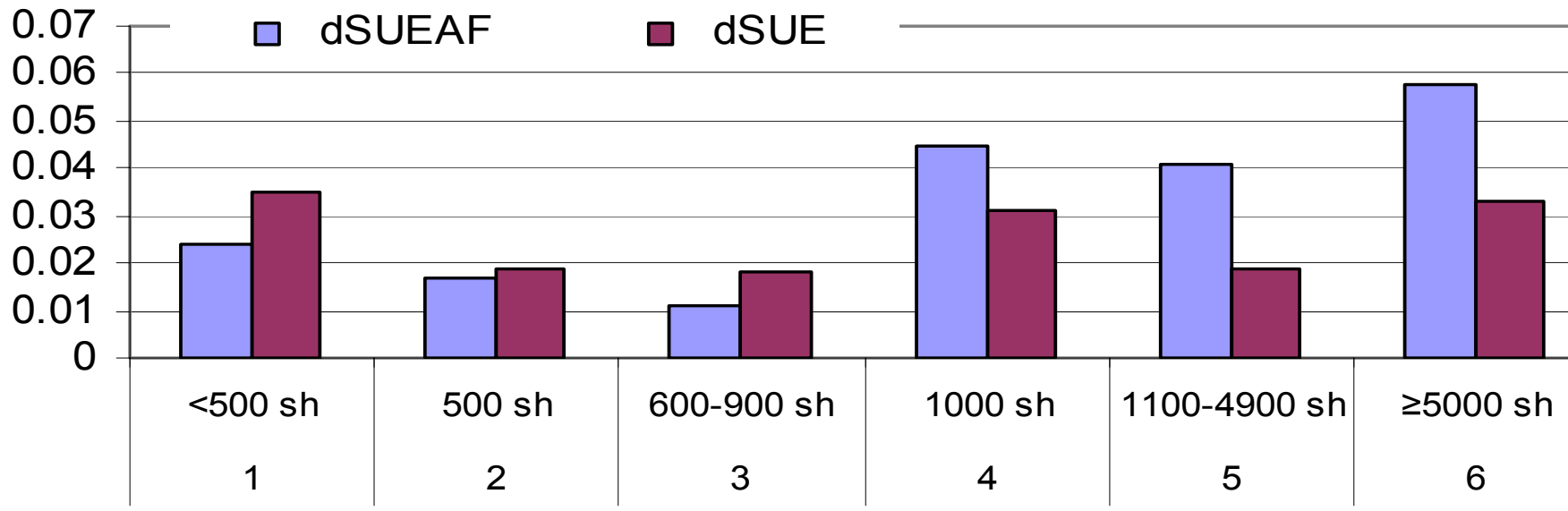
$$NetBuy_{Event} = \frac{NetEventBuy - \frac{1}{2}(NetPreBuy + NetPostBuy)}{Avg.\# \text{ of Non - Event Trades}}$$

Net Buying Behavior (Cont.)

- *NetPreBuy*: 3-day window centered on the 20th day before the preliminary earnings announcement date.
- *NetPostBuy*: 3-day window centered on the 20th day after the SEC filing date.
- A minimum of 10 trades is required for each 3-day period in the study (pre, earnings, SEC filing, and post).

Preliminary Earnings Announcement

Correlations Between Net Buying and Earnings Surprises

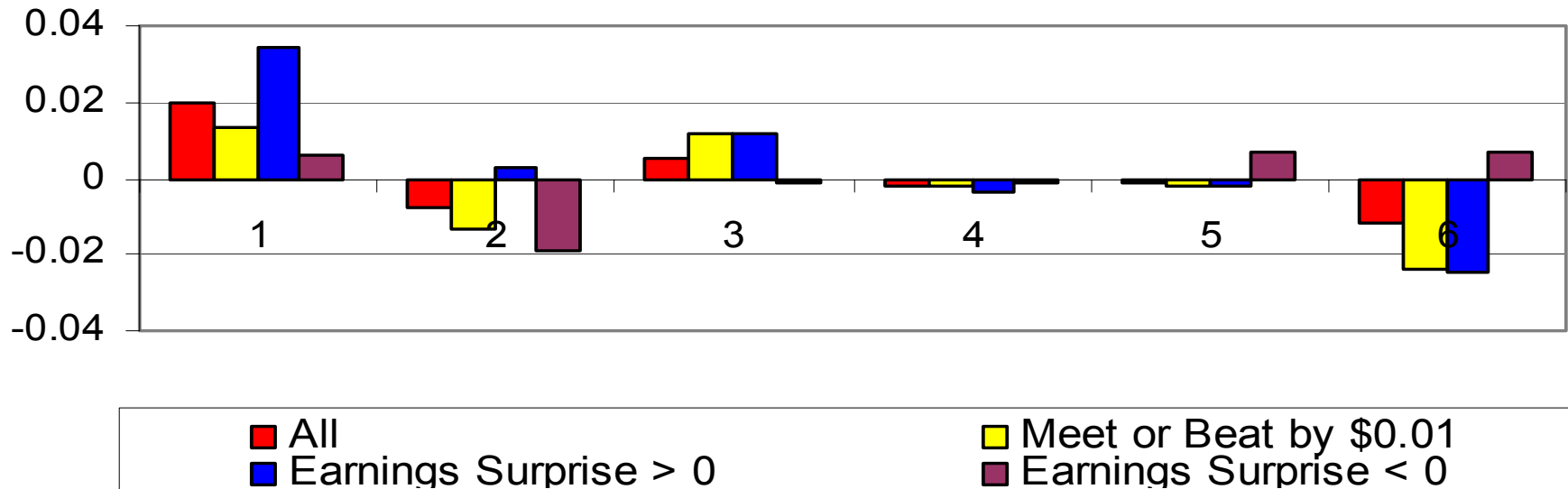


Net buying behavior of small (large) traders is more closely associated with SUE (SUEAF).

Table 4

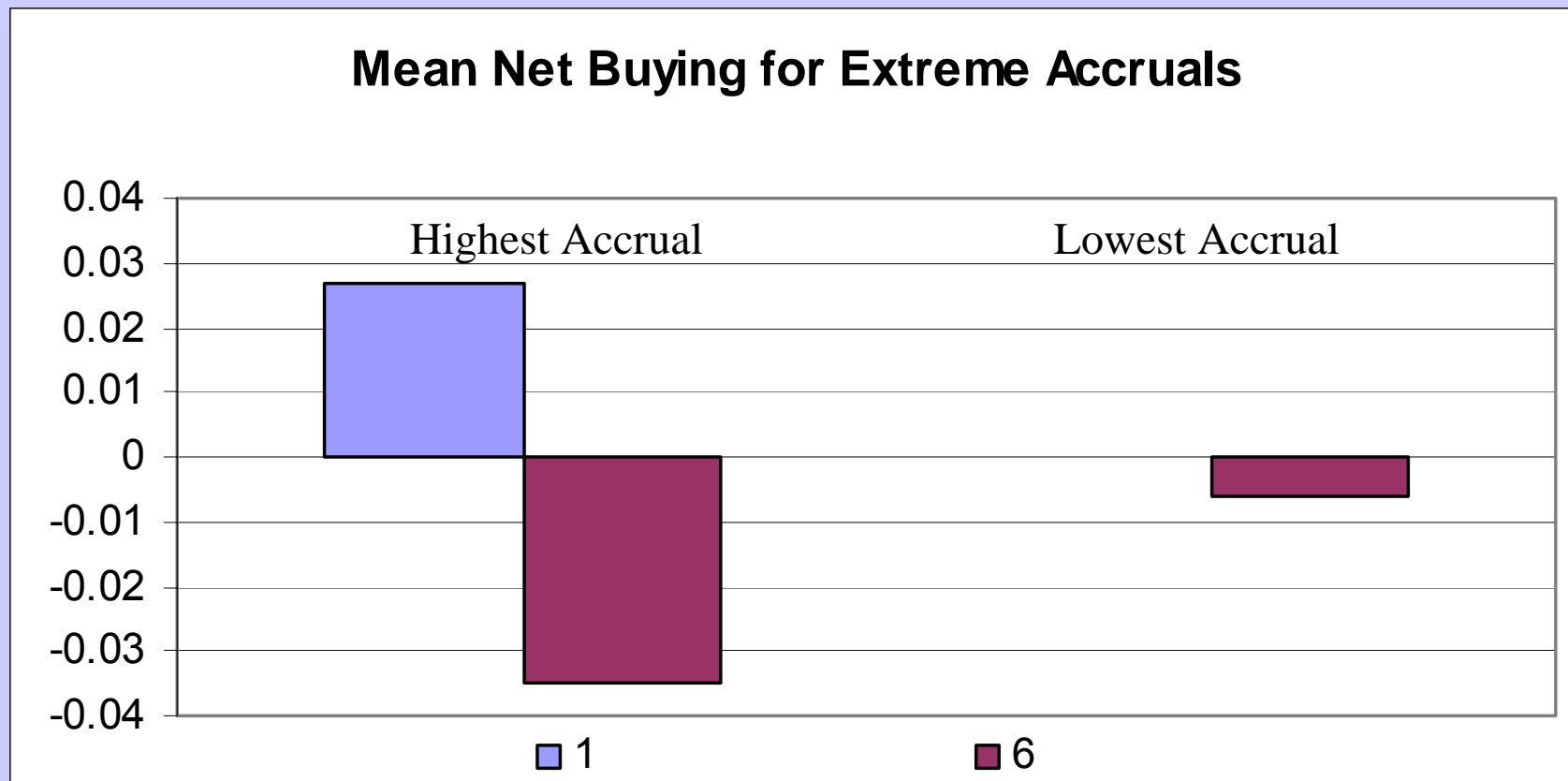
SEC Filing Date

Correlation Between Net Buying Behavior and Accruals



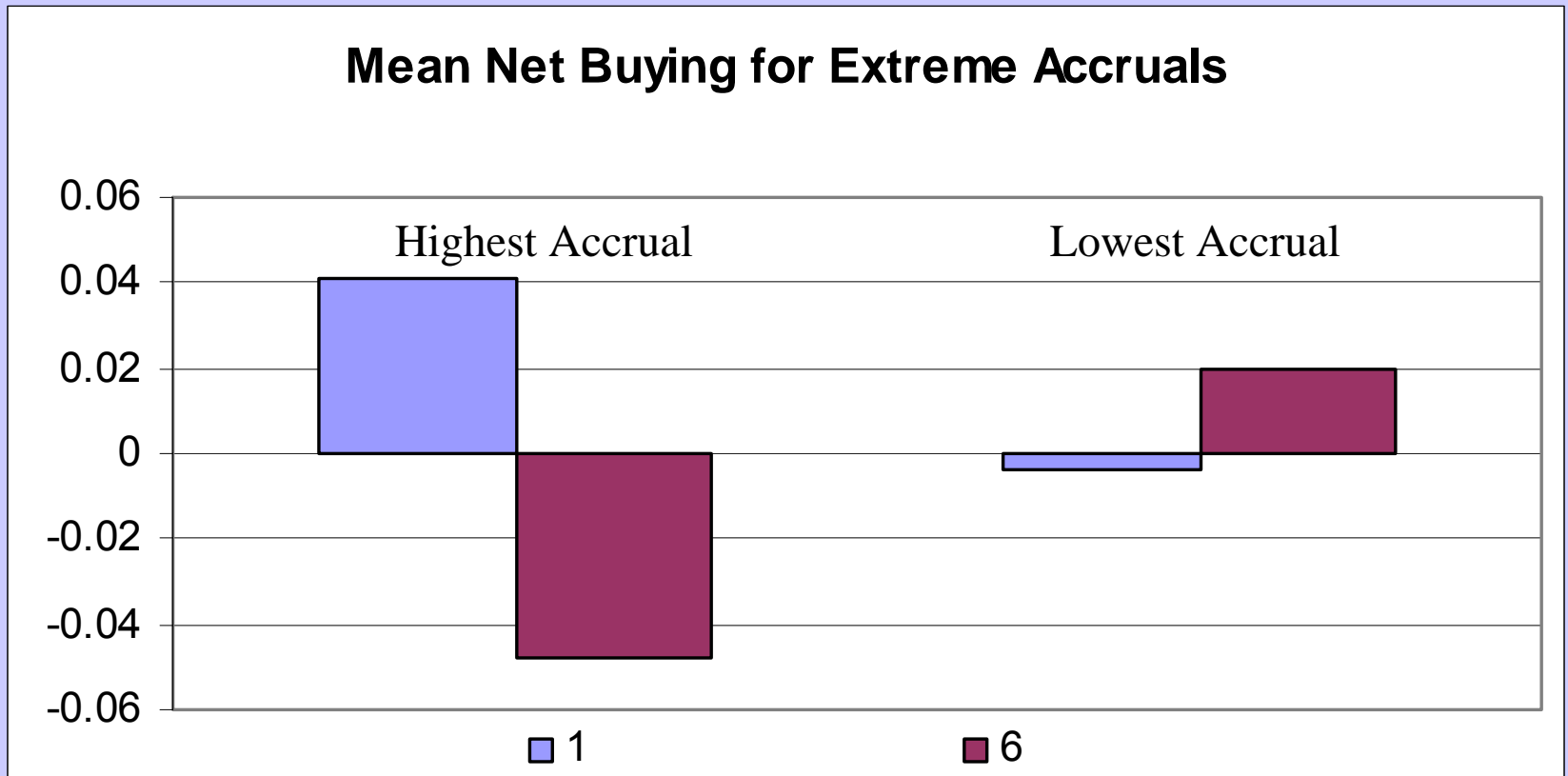
Net buying behavior of large (small) traders is
Consistent (inconsistent) with accruals.

All Observations



Small traders buy significantly more when accruals are high.
Large traders sell more when accruals are high.

Positive Preliminary Earnings Surprise



Small traders buy significantly more when accruals are high.
Large traders sell significantly more when accruals are high.

Table 6 (Panel B)

Net Buying – SEC filing

<i>F-M Regression</i>	NetBuy 1	NetBuy 1	NetBuy 1	NetBuy 6	NetBuy 6	NetBuy 6
dSUE	0.017	-0.004	0.008			-0.024
	<i>0.027</i>	<i>0.763</i>	<i>0.561</i>			<i>0.393</i>
dSUEAF			-0.043	0.062	0.078	0.081
			<i>0.002</i>	<i>0.008</i>	<i>0.023</i>	<i>0.020</i>
dACC	0.025	0.007	0.008	-0.050	0.017	0.021
	<i>0.001</i>	<i>0.576</i>	<i>0.531</i>	<i>0.060</i>	<i>0.650</i>	<i>0.567</i>
POS		0.017	0.017		-0.014	-0.011
		<i>0.092</i>	<i>0.093</i>		<i>0.563</i>	<i>0.679</i>
dACC*POS		0.040	0.040		-0.113	-0.114
		<i>0.024</i>	<i>0.024</i>		<i>0.010</i>	<i>0.009</i>

Table 7

Economic Interpretation

- Consider two stocks with $SUEAF > 0$, with 50 large buys and 50 large sells in the non-event windows (*100 non-event trades, net non-event buy is 0*).

- Stock A: extreme low accruals which induced

5 additional buys:
$$NetBuy(Low_Accrual) = \frac{+5 - 0}{100} = +0.05$$

- Stock B: extreme high accruals which induced

5 additional sales:
$$NetBuy(High_Accrual) = \frac{-5 - 0}{100} = -0.05$$

- Then the coefficient on $dAcc * Pos$ in the regression is **-0.100**. We observed **-0.113**.

Conclusions from Net Buying

- Small traders seem to behave **contrary** to the accrual signal around the SEC filing date.
- Large traders seem to behave **according** to the accrual signal around the SEC filing date.
 - However, large traders seem to behave according to the accrual signal only when preliminary earnings surprises are positive. They seem to ignore the accrual signal when the preliminary earnings surprise is negative.

Takeaways

- Accruals are incrementally informative to earnings and can be actively used to obtain abnormal returns.
- Large traders seem to trade according to the accrual signal around SEC filing dates. Small traders seem to trade against the accrual signal.
- Investors seem to react differently to accruals depending on the preliminary earnings surprise.