Lecture 8: Stock market reaction to accounting data

In this lecture we will focus on how the market appears to evaluate accounting disclosures. For most of the time, we shall be examining the results of different studies of the response of the market to data. We shall also look at whether the market sees through accounting manipulations, the role of analysts, inflation effects and so-called short termism.

Why might use of accounting data to find misvalued shares be problematic?

- Accounting data are poor indicators of economic value (especially in absolute as opposed to relative terms) – ratios, peer groups satisfactory, however
- Doubt regarding predictive value of accounting data, and necessary skills of analysts
- Lags
- Market is semi strong form efficient, suggesting that analysis of information unlikely to be highly profitable

Measuring the stock market impact of earnings disclosures

Both accounting data and share prices purport to reflect value (capital) and change in value (profit)
Issue arises of existence of relationship and timing (lags due to need for finishing reporting period)

Firth (1981) – looked at four types of accounting release in UK – interims, preliminary announcement, annual report and AGM, assessed return relative to CAPM

- Abnormal returns to interims, preliminary and annual report, implying new information
- Also high levels of trading and volatility for smaller firms (less researched)

Abnormal returns and unexpected earnings

- Ball and Brown (1968) event study

Estimation of the surprise component of earnings and of prices (sensitivity of earnings of firm EF to all firms' earnings EA)

$\Delta EF = \alpha + \beta EA$ use to forecast ΔEF^*

Unexpected UE = $\Delta EF - \Delta EF^*$

against a benchmark (market model)

Construction of good news and bad news portfolios using different regression methods

Positive reaction of prices to direction of earnings surprise

- Beaver et al (1979) assessed whether size of error correlated with size of share price move

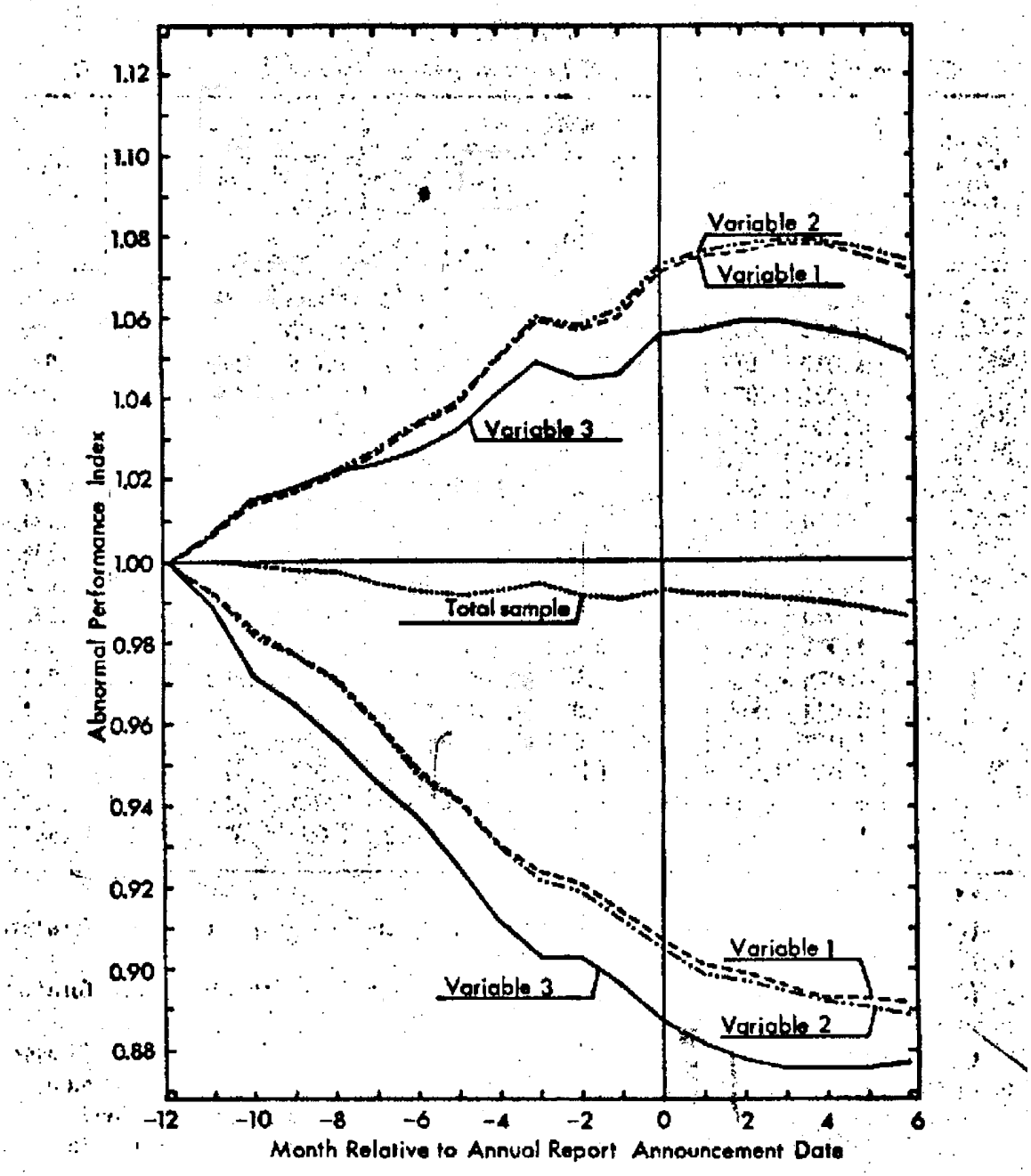
Strong positive results

Forecast errors correlated to beta

Conclude that only some information in accounting disclosure

Abnormal performance indices for various portfolios

Variable 1: net income regression, Variable 2: EPS for regression, Variable 3: EPS for naïve model



The anticipation of earnings disclosures

- As shown in BB chart, 90% of response capitalized in price before announcement
- But still some response of prices to announcement itself

Beaver et al (1987) looked at stock prices between earnings announcements

- Found predictive power of earnings announcements g from earlier share price changes G

$G = \alpha+\beta G + \delta G_{t-1}$

$B = 0.6$

Kothari and Sloan (1992)

- Estimated equation of return regressed on earnings announcement X; deflated by lagged share price

$P_t/P_{t-\tau} = a + b (X_t/ P_{t-\tau})$

- Found share price movements over previous four years predict current earnings announcement
- $\tau = 1$: 2.6
- $\tau = 2$: 4.7
- $\tau = 3$: 5.1
- $\tau = 4$: 5.5
- Results partly explained by omission of market return
- Current earnings was picking up explanations attributable to market factors. But still share prices anticipate earnings

Other aspects of accounting disclosure

Interim earnings (Foster 1979)

- Helps explain small reaction to annual earnings (data already available)
- High reaction to interims and reduction in reaction to annual report, once they are introduced

Small firms (Grant 1980)

- More information content due to less information in the interim period

Delayed disclosure (Chambers and Penman 1984)

- Positive response to early and negative to late
- Market anticipates bad news in latter case

Market reaction to earnings versus cash flow (Beaver and Dukes 1972)

- Future cash flows determines share prices
- But abnormal reaction to earnings (i.e. income statement) stronger than to cash flows
- Possibly due to greater dispersion of cash flows (so earnings show underlying trend better)

Dechow 1994 – earnings and cash flow both have negative autocorrelation, but reversals are greater for cash flows. Earnings have stronger association with stock returns than cash flows do

Overall results consistent with semi strong form efficiency
Impact depends on level of uncertainty surrounding announcement, reliability of data (market discounts if uncertain) and impact on future cash flows (hence focus on earnings)

Possible exceptional case: Earnings prediction and balance sheets (Ou and Penman 1989)

- Does market impound balance sheet information relevant for future earnings?
- Construct variable from balance sheet data relating to probability next periods earnings will increase
- Logit model shows there are variable containing information about earnings not contained in lagged earnings, and information does not get reflected in share prices (potential excess returns)

Possible explanations

- Earnings manipulation (apparent in balance sheet)
- Capital (investors ignore relevant changes)
- Inventories (predictive power over profits)

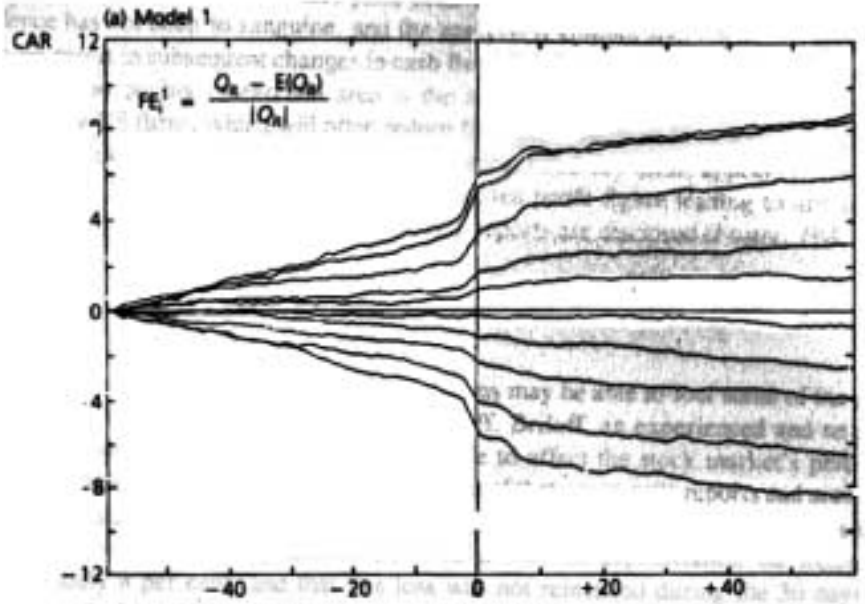
Earnings response coefficients and post earnings drift

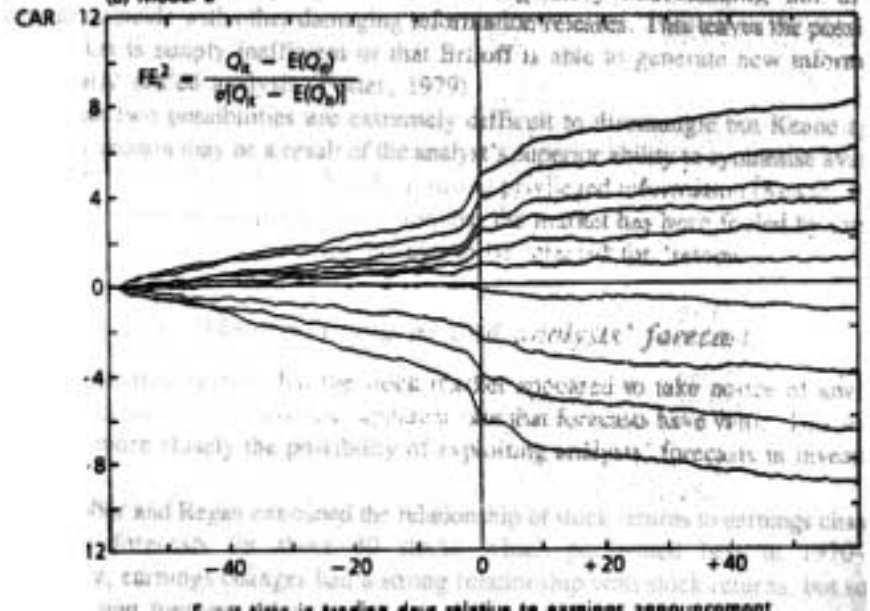
Testing for post earnings drift

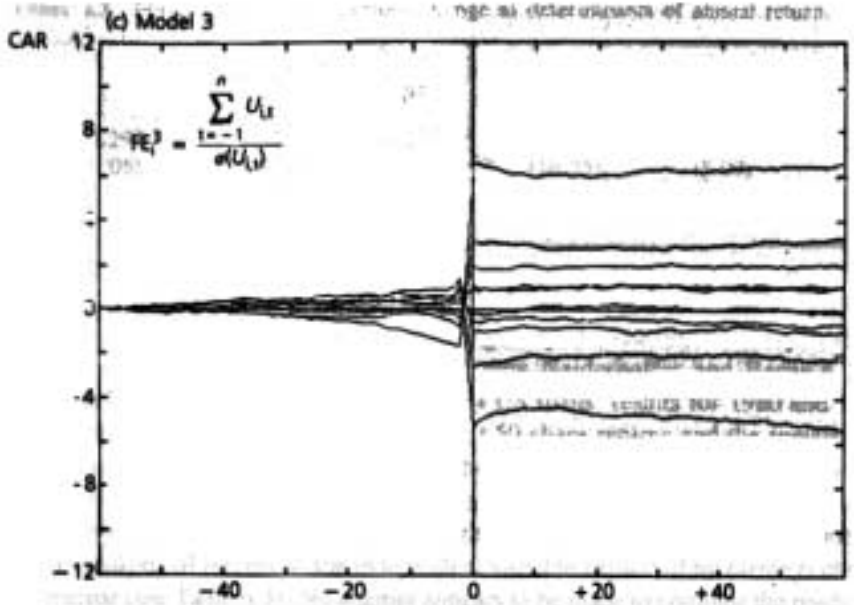
- Pre earnings trends continue for some time after announcement
- Implies gradual response to surprise, although information available freely
- Paradox for finance theory which suggests instant response, or if anomaly, arbitraged away

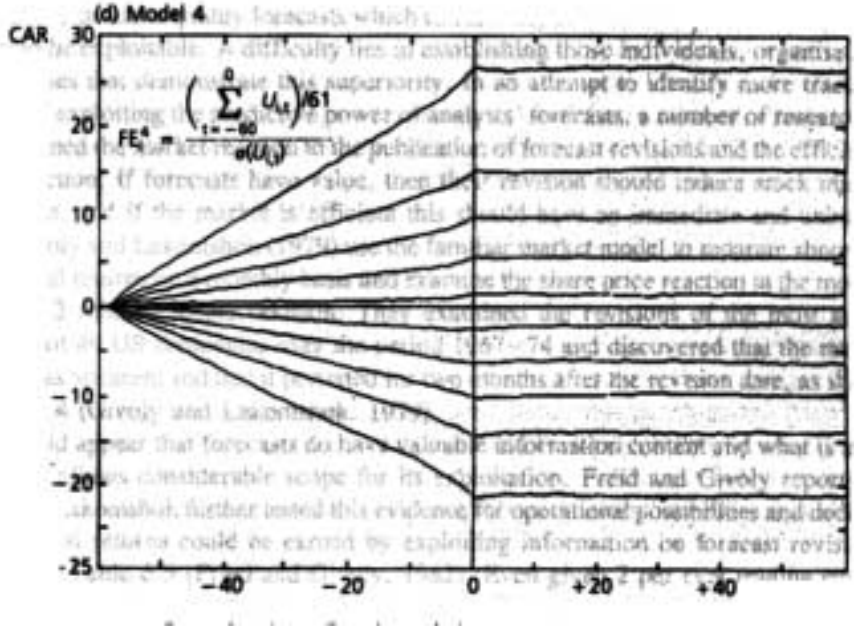
Foster et al (1984),

- Found earnings drift only when using time series forecast of earnings, but not when using market reaction to estimate earnings surprise
- Possible reasons for drift
  - Capital market is inefficient
  - CAPM too simple
  - Measurement error in CAPM variables
  - Information not yet public is assumed to be available
  - Inefficiencies sample specific
  - Unobservable costs of information processing


(a) Model 1
CAR
12
8
4
0
-4
-8
-12
$FE_t^1 = \frac{Q_t - E(Q_t)}{|Q_t|}$
-40
-20
0
+20
+40
Event time in trading days relative to earnings announcement


(b) Model 2
CAR
12
8
4
0
-4
-8
12
$FE_t^2 = \frac{Q_t - E(Q_t)}{\sigma[Q_t - E(Q_t)]}$
-40
-20
0
+20
+40


(c) Model 3
CAR
12
8
-4
-8
-12
$FE_t^3 = \frac{\sum_{t=-1}^{\hat{n}} U_{it}}{\sigma(U_{it})}$
-40
-20
0
+20
+40
Event time in trading days relative to earnings announcement


(d) Model 4
CAR
30
20
10
0
-10
-20
-25
$FE_t^4 = \frac{\left(\sum_{t=-60}^{0} U_{it}\right)/61}{\sigma(U_{it})}$
-40
-20
0
+20
+40

Bernard and Thomas (1990)

- Suggest that drift results from market failing to understand announcement initially, full response later
- Found market reacts as if naïve expectation of current quarterly announcement equal to last one ("seasonal random walk")
- Done by comparing autocorrelation structure of changes in quarterly earnings with abnormal returns, found good match

Accounting manipulations

- Can managers manipulate market by accounting policy?
- Beaver and Dukes (1973) – market sees through differing depreciation policies (where different effects on earnings are cancelled out, P/E ratios are the same)
- But may be fooled by changes in inventory valuation policies, e.g. LIFO has effect of reducing tax liabilities and depressing reported profits
- Briloff – expert examination of published accounts and loss of earnings (companies criticized by Briloff saw loss of capitalization of 8% on average)

Abnormal returns and analysts forecasts

Can one exploit analysts' forecasts in investment strategies? Does the error between forecast and actual as well as actual earnings change affect stock returns (traditional view)?

Benesh and Petersen (1986) – separation of companies into best and worst performers and remainder (70%)

- Best firms higher earnings growth but also accentuated by forecast error on worst (over optimism)
- Abnormal returns on forecast revisions for most active forecaster

Inflation and market values

Modigliani and Cohn (1979) – shares undervalued in inflationary periods

- Possibly investors discounted current earnings using nominal interest rate, ignore gains on money fixed liabilities
- Hence Tobin's Q (share value/replacement cost of capital: indicator of profitability of fixed investment) was deflated over 1970s by as much as 50%

The issue of "short termism"

Excessively high discount rate on future earnings

Why could short termism exist?

- Focus on short term returns
- May be motivated by short term performance measurement of asset managers – need to maintain position relative to peers (see Lecture 10)
- And by impact of corporate governance (Lecture 7)

Why might it be important?

- Possible disincentive to long term investment/R and D

Theoretical views on short termism

- Incoherent as prices depend on future earnings
- But could be rational if corporate managers risk averse and arbitrage limited

Empirical work on short termism

- Miles, tested using following no-myopia share price equation

$$P_{jt} = \frac{\sum_{i=1}^{N} \frac{(1-\bar{m})}{(1-\bar{s})} E_t(D_{jt+i})}{(1+r_{t,t+i}+\pi_j)^i} + \frac{E_t(P_{jt+N})}{(1+r_{t,t+N}+\pi_j)^N}.$$

Tests: (1) are discounts to cash flows accruing in future excessively high? (2) are excessively pessimistic cash flow forecasts associated with long horizon projects (3) market discounts cash flows more heavily

if more than five years in the future. Results support all three hypotheses

Other research

- Poterba and Summers – mean reversion in stock prices seen as evidence of short termism
- But markets favour capital gains over dividends
- And announcement of capital expend and R and D boosts share prices
- Pension funds hold shares for long periods