Research Methods in Accounting

Capital Markets Research in Accounting

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Recommended Readings


- Other journals mentioned in this document.
Objectives

- To introduce you to capital market research in accounting
- In particular, we will review researches, theories and related methodologies on the relationship between capital markets and financial statement information.
- The contents are mainly drawn from “Capital Market Research in Accounting” by Kothari (2001).
Demand for Capital Market Research in Accounting

At least four sources of such demand:

- Fundamental analysis and valuation
- Tests of capital market efficiency
- Role of accounting in contracts and in political process
- Disclosure regulation
Fundamental Analysis and Valuation

- In an efficient market, firm value is the present value of expected future cash flows discounted by risk-adjusted rate of return.

- Firm’s current performance as summarized in its financial statements is an important source to determine the firm’s future cash flows and thus the firm’s market valuation.

- Therefore, an association between current financial performance and future cash flows, as well as a contemporaneous association between financial performance and prices/changes in prices is expected.
Fama (1970, 1991) defines an efficient market as “the market which security prices fully reflect all available information”.

Two main types of market efficiency test in accounting:

- Short- and Long-horizon event study
- Cross-sectional return predictability or the anomalies literature
Positive accounting theory (PAT, see Watts and Zimmerman, 1986) predicts that the use of accounting numbers in compensation and debt contracts and in the political process affects the firm’s accounting choices.

Huge literatures in this area entail the use of capital market data.

Mostly studies are stock-price-based tests of the PAT.
Disclosure Regulation

- Do financial statement numbers prepared according to new standard convey new information to the market?
- Are financial statement numbers prepared according to new standard more highly associated with stock returns and prices?
- Should there be a uniform set of accounting standards?
Early Capital Market Research

- Until mid 1960s, accounting theory was generally normative.
- The EMH and positive economics as well as other related developments facilitated the birth of capital market research.
- Ball and Brown (1968) and Beaver (1968) were pioneers in empirical capital market research who try to ascertain whether accounting numbers contained or conveyed information about firm’s performance.
Early Capital Market Research (cont’d)

Three major concurrent developments during that time ...

- Positive Economics Theory
- EMH and CAPM
Positive Theory

- Friedman (1953): The development of a theory or hypothesis that yields valid and meaningful predictions about phenomena yet to be observed.

- Watts and Zimmerman (1968): PAT is to explain and predict accounting practice.
  - Explanations mean providing reasons for observed practice.
  - Predictions of accounting practice means that the theory predicts “unobserved phenomena”
Positive Theory (cont’d)

- PAT has an economic focus and seeks to answer such questions – what is the effect of reported financial statements on share price, for example?

- PAT is based on assumption about the behaviour of individuals, therefore, PAT attempts to …
  - Explain manager’s choices of accounting methods in terms of self-interest,
  - Explain the relationships between stakeholders,
  - Understand how financial accounting can be used to minimize cost by aligning competing interests
In sum, PAT is based on the central economic-based assumption that all individuals’ action is derived by self-interest and that individuals will act in an opportunistic manner to the extent that the actions will increase their wealth.

Therefore, PAT predicts that organization will seek to put in place mechanisms that aligns the interests of the manages of the firm (agent) with the interests of the owners of the firm (the principal). (Agency Theory by Jensen and Meckling, 1976)
Ball and Brown (1968) assert that “capital market efficiency provides justification for selecting the behavior of security prices as an operational test of usefulness of information in financial statements.”

Sharpe (1964) and Lintner (1965) developed the CAPM to predict security’s expected returns based on its covariance risk of its cash flows relative to the market.

CAPM together with EMH greatly facilitate the estimation of firm-specific return component.
Event Study by FFJR (1969)

- FFJR (1969) conduct the first event study in financial economics, the stock splits, in particular.

- Event studies are joint tests of EMH and model of expected rate of returns used in estimating abnormal returns.

- In event study, one infers whether an event conveys new information into market as reflected in changes in the level or variability of security prices or trading volume.

- Therefore, the maintained hypothesis in an event study is the capital market is informationally efficient!
Association Studies

- Association study tests for a positive correlation between an accounting performance measures and stock returns.

- Considering to timeliness issue, association studies do not presume that accounting numbers are the only source of information to market participants.

- Empirically, stock prices lead accounting earnings in terms of reflecting new information.
Before we move to other sections, it would be nice to highlight the important of maintained hypothesis in research that uses stock returns as a criterion for evaluating in formativeness of accounting numbers.

If EMH is maintained hypothesis, neither positive nor negative abnormal returns are predicted in post-event periods, systematic evidence of non-zero abnormal returns would refute market efficiency,

What happens if market inefficiency is maintained hypothesis?
Early capital market research reveals that

- Financial statements have information content and
- Such numbers reflect information that influences security prices even not on a timely basis.

Five sources of demand for capital market research

- Methodological capital market research
- Alternative accounting performance measures
- Valuation and fundamental analysis
- Tests of market efficiency
- Value relevance of disclosures
Example research questions:

- Do current-cost earnings have incremental information content over historical cost earnings?
- Do differences in corporate governance structures affect the degree of information asymmetry in capital market?
- Does managerial ownership structure affect the informativeness of accounting numbers?
- Does the perceived quality of an auditor affect the relation between corporate earnings and security returns?
Kothari (2001) reviews four sub-methodology issues

- Earnings response coefficients (ERC)
- Properties of time-series, management, and analysts’ forecasts of earnings and earnings growth rates
- Issues in statistical inferences
- Models of discretionary and non-discretionary accruals
Earnings Response Coefficients (ERC)

- Motivated by the application in valuation and fundamental analysis.
- Kormendi and Lipe (1987) is an early paper on ERCs (also Miller and Rock, 1985)
- ERCs are a mapping of earnings’ time series properties and discount rates into changes in equity market values.

**Unexpected Return** = \( a + b \text{(Unexpected Earnings)} + \varepsilon \)

- The ERC is an estimate of the change in a company's stock price due to the information provided in a company's earnings announcement.
ERCs have been widely used in research in positive accounting as they theoretically describe how markets react to different information events.

Kothari (1989) identifies 4 economic determinants of ERC:

- Persistence: positive relationship
- Risk: negative relationship
- Growth opportunities: positive relationship
- Interest rate: negative relationship
In spite of its popularity, the magnitude of the ERC is relatively small compared to its predicted value.

Beaver, Lambert, and Morse (1980) summarise three possible explanations:

- Prices lead earnings
- Inefficient capital markets
- Noise in earnings and deficient GAAP
- Transitory earnings (additional evidence)
Prices Lead Earnings

- Information set reflected in prices is richer than that in contemporaneous accounting earnings.

- Thus, even though annual earnings time-series are random walk, the information set reflected in price contains information about future earnings changes.

- That is, from the perspective of the market, successive annual earnings changes are not unpredictable.

- So, only small portion of such earning change is a surprise to the market and hence biases downward the ERC.
Inefficient Capital Markets

- Stock market underreacts to earnings information and recognizes the full impact of the earnings information only gradually over time.

- See evidence on post earnings announcement drift (PEAD)
Beaver, Lambert and Morse (1980) models accounting earnings as “true earnings” plus value-irrelevant noise that is uncorrelated with stock prices.

The deficient GAAP argument posits that financial statements are too slow to incorporate the information that is reflected in contemporaneous market values.
Although annual earnings are usually assumed to follow a random walk, the presence of transitory components in earnings has long been recognised in the literature.

Possible reasons:

- Business activities
- Information asymmetry and threat of litigation motivate management to disclose bad news timely
- Discretionary accruals which in fact mean reverting
Properties of earnings forecast

- Random walk vs. Mean reversion
- Annual vs. Quarterly earnings
  - Quarterly earnings are seasonal in many industries
  - Quarterly earnings are more timely and could be used as proxy for market’s expectation
  - One downside is they are unaudited
- See more on analysts’ or management forecasts of earnings
  - Properties of consensus analysts’ forecasts
  - Properties of individual analysts’ forecasts
Properties of earnings components

- First, whether earnings components are incrementally informative beyond earnings in their association with security prices.
- Second, accruals and cash flows are the two most commonly examined components of earnings in their association with firm performance.
- Lastly, summing the forecasts of the components might yield a more accurate forecast of earnings.
Focus on **FIVE** main areas:

1) Motivation

2) Discretionary Accrual Models

3) Evaluation of Discretionary Accrual Models

4) Future Research: better models, better tests

5) Capital Mkt Research Implication
Schipper (1989) defines “earnings management” as purposeful intervention in the external reporting process, with the intent of obtaining some private gain to managers or shareholders.

Three streams of research use discretionary accrual models:

1) Testing of contracting- and political-cost-based hypotheses >> management’s incentives to manipulate accounting numbers.

2) Market Efficiency’s concepts

3) Testing the joint hypothesis of market inefficiency and accrual manipulation with a capital market motivation.
The most powerful models (from the total of five well-known model in this area) are:

- Jones (1991) model and
- Modified-Jones model by Dechow et al. (1995)

The evidence by using either cross-sectional or time-series estimations shows no differences.

Cross-sectional estimation appears to have less data availability requirement for firms to be included in the analysis.
Evaluation of Discretionary Accruals Models

- Previous studies remain suggesting to apply the Jones (1991) or Modified-Jones model, in order to capture the earnings management.

- However, discretionary accruals models are seriously misspecified.

- Due to the correlation between past (and contemporaneous) firm performance and the magnitude of normal accruals.
The misspecification of and bias in the discretionary accrual models suggest that inferences about earnings management might not be accurate.

The accruals tests need to be improved because:

1. Modified-Jones model provides only one year examination of discretionary accrual performance >> multi-year performance

2. Misspecifications >> when assume cross-sectional independence.

Future Research: Better Models, Better Tests
Future Research: Better Models, Better Tests

- 3. The survivor bias due to the misspecifications. Possible solution is using the Bootstrap standard errors.

- 4. Lower percentage of firms surviving the multi-year test period.

- 5. Literature (e.g. Barber and Lyon, 1996) suggests that use of a performance-matched control firm yields unbiased measures of abnormal operating performance in random and non-random samples.
The bias remains exist in the estimation of discretionary accruals (e.g. in the management’s IPO decision and the use of Modified-Jones model).

The bias left the management’s IPO decision to be endogenous.

Modified-Jones models will turn all increase in accounts receivables as discretionary. Thus, the revenue growth is treated as discretionary.
Current research tends to focus more on the investigation of new performance measures that the FASB requires to be disclosed.

Evidence shows that performance measures that have evolved voluntarily in an unregulated environment (e.g. REITs) are more likely to be incrementally informative than those mandated by regulation (e.g. comprehensive income).
Research evaluating alternative performance measures must recognise that the objective of a particular performance measure should influence the choice of a test.

Previous studies (e.g. Dechow, 1994) support the concept of using the unexpected component of the performance measure.

Equally, correlating the level of the performance measure with the level of price.

Correlation with prices indeed correlates the entire performance measure with prices.
If the correlation with future CFs is utilised as the criterion to evaluate alternative performance measures, then the test of the performance measure’s correlation with prices is required.

Correlation of performance measure with prices will provide the information about expected future CFs in an efficient mkt.