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CHARACTERISTICS OF FIRMS

AND

VOLUNTARY INTERIM EARNINGS DISCLOSURES

Michael E. Bradbury

A thesis submitted in fulfilment of the requirements for the degree of DOCTOR OF PHILOSOPHY

in the

DEPARTMENT OF ACCOUNTING AND FINANCE

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This thesis reviews the evolution of interim reporting in New Zealand. The attempts to regulate interim reporting by the Stock Exchange Association of New Zealand and the lobbying behaviour of affected parties are documented. The regulation of interim reporting is interpreted as a series of self-interest actions by the affected parties.

In 1973 semiannual reports were mandated for all firms listed on the New Zealand Stock Exchange. However, the content of these reports, was not specified until 1976. The extent of voluntary reporting practice prior to 1973 is recorded. The major empirical analysis of the thesis examines the association between corporate characteristics and the voluntary disclosure of semiannual earnings during the period 1973 to 1976.

The analysis shows that firms with high semiannual earnings disclosures have more shares issued, have paid an interim dividend, carry relatively less inventory, are in a more seasonal industry and have a greater earnings forecast error. Assets in place, political costs of disclosure and competitive costs of disclosure are not found to be associated with the level of semiannual earnings disclosure.
(iv)

Sensitivity analysis indicates that the significance of the explanatory variables depends on firm size and upon the threshold level of disclosure.
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CHAPTER ONE

INTRODUCTION

This study examines the association of corporate characteristics and the voluntary choice of semi-annual earnings disclosures for New Zealand firms during the 1973-76 period.

Ball and Foster (1982) discuss five motivations for the choice of research topic. Two of these motivations (importance to research communities and importance to external parties) are output considerations concerned with the usefulness of the research project. The remaining three motivations (availability of theory, data and statistical techniques) are research design considerations.

1.1 Importance to research communities

This study is part of the contemporary research programme (or paradigm) concerned with the development and testing of a positive theory of accounting policy choice. The aim is to provide economic based explanations of accounting practice (rather than normative theories for accounting). Watts (1977), Watts and Zimmerman (1978) and others postulate that taxes, political costs, management compensation, information
production costs and contractual arrangements (e.g. debt covenants restrictions) are the economic factors which influence managers' choice of accounting policy.

This study extends earlier research on interim reporting by Leftwich, Watts and Zimmerman (1981) [LWZ] and examines whether economic factors are associated with voluntary interim reporting disclosures. First, it adds to the external validity of positive accounting theory in general and to LWZ's results in particular, by examining interim reporting in a different institutional domain. Research from different time periods, different issues and different institutional environments provides strong (independent) tests of the hypotheses developed from positive accounting theory. An interesting result of this study is the significant association between the level of interim earnings disclosure and the payment of an interim dividend. This relation is not found significant by LWZ. However, different institutional and contracting arrangements can account for this apparently conflicting result. Second, by focusing on attributes of interim financial reports (other than reporting frequency), this study incorporates a methodological refinement suggested by LWZ. Third, it develops empirical proxies for information production costs of interim reporting, whereas LWZ explicitly assumed no cross sectional or time series variation of information production costs.
1.2 Importance to external parties

The Securities Commission is undertaking a major review of the law and practice relating to financial reporting.\(^1\) The Law Commission (1987, p.82) is currently reviewing company law in New Zealand and raises the question of more frequent financial reporting.\(^2\) In addition, the New Zealand Society of Accountants has recently included interim reporting on its agenda for a potential accounting standard. Interim reporting is therefore an emerging issue for New Zealand accounting policy regulators.

Regulating the flow of financial information to investors is an important feature of the financial reporting environment. The determination of accounting standards involves consideration of "qualitative characteristics" [for example, FASB (1980)] together with the economic consequences of alternative accounting policy choices [see Zeff (1978)]. Beaver (1981) notes that regulation of the financial reporting environment is a social choice involving tradeoffs among economic consequences and among capital market constituencies (investors, firms, financial intermediaries, government agencies). Hence, accounting

\(^1\)Securities Commission (1985).

\(^2\)Company Law currently requires only annual reporting.
policy makers concerned with the impact of their decisions face two fundamental tasks: (1) predicting the consequences of their decisions, and (2) choosing an alternative on the acceptability of those consequences.

The latter task is concerned with resource allocation and the determination of welfare trade-offs within society. This involves issues of social choice and is not examined further in this thesis.\(^3\) This study is concerned with the consequences of accounting policy regulation. Watts and Zimmerman (1986, p.14) note:

> Positive accounting theory is important because it can provide those who must make decisions on accounting policy (corporate managers, public accountants, loan officers, investors, financial analysts, regulators) with predictions of, and explanations for, the consequences of their decisions.

Casual observation indicates that a small but growing number of New Zealand firms are voluntarily releasing estimates of quarterly earnings. Voluntary interim reporting was also a feature of the reporting environment prior to the regulation of semi-annual reporting [see Robb (1973)]. What implications does

\(^3\)A discussion of social choice issues in accounting policy decisions can be found in Beaver (1981). For a critical evaluation of analytic research on public disclosure and social welfare refer Verrecchia (1982).
voluntary reporting have for accounting policy regulators?

The importance and motivation for examining voluntary interim disclosure is expressed in Dye (1985, p. 544):

One of the limitations of most discussions of mandatory accounting reporting procedures is that these discussions give little attention to firms' incentives not to disclose information voluntarily.

In any voluntary reporting environment it must be expected that some companies will not disclose. If firms have incentives not to disclose private information then these incentives ought to be considered when evaluating the consequences of alternative financial reporting regimes. Voluntary disclosures are capable of providing the same information contained in mandatory reports without imposing the burden of such disclosures uniformly across all firms. Furthermore mandatory disclosures can remove the ability of firms to use voluntary disclosures as signals of private information [see Dye (1985)].

On the other hand, if firms have incentives to voluntarily disclose (or at least not to withhold) information then allegations of "market failure", which are often used to support regulation, are more difficult to sustain.
1.3 Research design considerations

The availability of data, theory and statistical techniques are additional motivations for the choice of this research design [Ball and Foster (1982)].

Chapter Three indicates that data on voluntary interim reporters is available in New Zealand. Interim reporting was regulated by the Stock Exchange in 1974. However the content of these reports was not specified until 1976. Hence, the level of interim earnings disclosures prior to this date remained discretionary. This study therefore examines the level, rather than the act, of semiannual earnings disclosures in the period prior to 1976.

A comprehensive theory of corporate disclosure does not currently exist. However, recent developments in a "positive accounting theory" provide a theoretical framework sufficient to raise the study beyond the mere search for empirical regularities, to one that examines causal explanations. The independent variables in this study are chosen to proxy for economic determinants of managers' accounting policy choice. Statistical techniques for analysing corporate accounting policy choice are reasonably well developed.
1.4 Structure of thesis

The remaining structure of this thesis is as follows. Chapters Two and Three provide background information for the study. Chapter Two places the study in the context of prior research. It reviews both the research undertaken on interim reports and the research which has examined voluntary corporate disclosure. Chapter Three describes the institutional arrangements for disclosure of financial accounting information. It also provides a chronology of the development of interim reporting in New Zealand and identifies the available data sources.

Chapter Four develops hypotheses of the economic factors that are expected to influence managers' choice of interim disclosure. Chapter Five discusses the research design employed to test these hypotheses: the data collection procedures, the specification of the dependent and independent variables, the univariate and multivariate statistical procedures.

Chapters Six (and Seven) present the main empirical results of the association between the hypothesised variables and the level (and changes in the level) of semiannual earnings disclosure.

Chapter Eight contains a summary and the principal conclusions reached.
CHAPTER TWO

PRIOR RESEARCH

2.1 Introduction
This chapter provides a background scenario of prior research on (1) the accounting issue of this study (interim reporting), and (2) the research approach (the association between voluntary disclosure and corporate characteristics). Research on interim reporting is reviewed under the following headings:

2.2 a priori and analytical research,
2.3 behavioural research,
2.4 time series research,
2.5 predictive value research,
2.6 market based accounting research,
2.7 corporate profile research.

Within each section, a comment is made on that particular research approach with regard to its strengths and weaknesses in providing evidence for accounting policy regulators and on the feasibility of adoption in New Zealand. In section 2.8 empirical research on voluntary disclosure is reviewed. Section 2.9 provides a summary.
2.2 A priori and analytic research

Initial studies on interim reporting are normative proposals concerned with the choice of alternative methods of determining interim income. The preferred choice of accounting for interim income is determined by a priori arguments from stated objectives of interim reporting, often supported by anecdotal or case study evidence. Examples of such studies are Shillinglaw (1961), Green (1964), Rappaport (1966), and Fogelberg (1971). Later studies adopt a more rigorous analytic approach to examine the choice of interim accounting method. Fried and Livnat (1981, 1985) and Hopwood and Newbold (1985) investigate the conditions and assumptions under which alternative methods of interim reporting produce the most desirable results, given assumed objectives.¹ This analysis shows that multiple-signal reporting (of both transitory and permanent components of earnings) enhances multiple interim reporting objectives.

Mathematical models have also been used to examine other issues related to interim reporting. Mister (1976) discusses an aggregation problem of interim reporting. Hakansson (1977) explores the welfare impact

¹The discrete, interval and combination methods of interim income determination and the objectives of interim reporting are fully discussed in FASB (1978).
of voluntary and mandatory disclosure, where some investors have advantages in costly and timely information search. Verrecchia (1982, p. 17) is critical of the "social value" literature:

In the absence of empirical evidence there seems to be no way to determine which set of exogenously specified assumptions is the most reasonable, and even if we could there appears to be no consensus in the literature about what constitutes "social value".

This quote by Verrecchia, indicates the complementary nature of empirical and analytical research. Mathematical models can provide predictions or explanations that are not readily obvious on the basis of intuition. Empirical research provides evidence on the validity of the assumptions used in the model or empirical tests of the model's explanations (or predictions).

The value of normative research for accounting policy choice lies in the acceptance of the underlying assumptions and the stated objectives (of interim reporting) by policy makers and regulators. Resolving normative claims becomes impossible if there is no consensus on the objectives. Hence, Gould (1982, p.45) suggests that researchers should focus on a different set of questions:

What is the positive theory explaining what kinds of public disclosure will emerge in an economy? Which agents are required to reveal information, and what kinds of information
must they reveal? Who benefits from this information, and what is the nature of this benefit? Such positive (as opposed to normative) questions emerge naturally once it is realized ..... that it is difficult, if not impossible, to devise Pareto-efficient disclosure policies.

Research which investigates alternative accounting procedures is undoubtedly useful to accounting policy regulators. However, these studies have generally assumed that interim reporting is mandatory. A more fundamental question for accounting policy regulators is whether interim reporting should be enforced or left voluntary.

2.3 Behavioural research

Behavioural research, as it is recognised in accounting, uses empirical methods (such as interviews, questionnaires and experimental research conducted in laboratories and other controlled settings) adapted from psychology and similar disciplines to seek how information is used.

The results of interview and questionnaire studies have shown that interim reports are an important source of information. In an international study by Chang, Most and Brain (1983), interim reports were ranked by financial analysts in New Zealand (United States and United Kingdom) as the second (fourth) most important source of information for investment decisions.
Questionnaire studies which have specifically addressed interim reporting issues include Edwards, Dominiak and Hedges (1972), Schiff (1978) and FASB (1978). These studies have sought to document the attitudes of users and preparers towards interim reporting disclosures and interim reporting methods. These surveys indicate that analysts are aware of the difficulties and the estimation processes inherent in the determination of interim income. Nevertheless, analysts do not appear to favour the audit of interim reports (or the delay caused by the audit process), preferring timeliness to accuracy.

Pany and Smith (1982) use a questionnaire to gather financial analysts' perceptions of the reliability of quarterly information associated with alternative degrees of auditor involvement. Responses from 57 financial analysts indicate that auditor association increases information reliability, but only for firms which have released inaccurate quarterly reports in the past. The results provide very limited support that users are able to distinguish varying forms of auditor association.

Very few experimental studies examine the issue of interim reporting. Bruns (1966) found that the length of the reporting period (quarterly or annual) did not affect participants' decisions (on advertising,
production etc.). Cook (1967) found that participants who receive quarterly reports in a business game outperformed participants who received only annual data. Bollom (1973) found that different interim reporting methods (including a nondisclosure alternative) in a business game had little impact on students' sequential investment decisions.

For accounting policy regulators, questionnaire studies provide background information on the perceptions of market constituencies and form a useful part of a broader research programme. However, the inherent weakness of questionnaires (such as non-response bias and the lack of reward structure) can diminish the reliability of the reported results (such as the relative rankings of information sources).

Experimental accounting research has not been particularly oriented towards standard setting issues. One reason for this, noted by Gibbins and Brennan (1982), is that experimental studies generally focus on the behaviour of individuals rather than aggregates (organizations and markets). Furthermore, aggregate

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\(^2\)FASB (1978 para. 138) refers to the role of information to help society allocate resources efficiently (an aggregate concept).
behaviour is unlikely to have properties deducible from separately observed individual actions (Beaver 1972).

A contributing factor for the lack of experimental research on interim reporting is, perhaps, the comparative advantage of alternative research methodologies in studying this issue. Although strong in internal validity, experimental research is generally weak on external validity (depending on the nature of the experimental task, reward structure, setting, and the skills and experience of participants). Given that quarterly reports and financial analysts' forecasts of quarterly earnings are readily available (at least in the United States), the use of actual interim data in actual decisions can reduce many external validity problems. Hence, alternative empirical research methodologies (such as those discussed in sections 2.4 to 2.7) have a comparative advantage in studying interim reporting.

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3 For specific comments on Bollom's (1973) study from within the behavioural research paradigm, and for a discussion of why business simulation studies have "essentially disappeared", see Swieringa and Weick (1982).

4 It is recognized that ex post facto research increases external validity at the expense of internal validity. However, Cook and Campbell (1979, p. 82) suggest that external validity is of higher interest to applied research (compared to theoretical research).
2.4 Time series research

A major focus of empirical research in accounting has been to describe the behaviour of financial statement numbers. A significant thrust of this research has been to identify a univariate statistical model that best characterizes the time series behaviour of corporate earnings and the use of the observed patterns to forecast future earnings.

Motivation for analysis of time series numbers comes from the need for better estimates of "expected earnings" for use in event studies [Foster 1977], studies assessing the relative forecasting ability of managers and financial analysts [Lorek, McDonald and Patz (1976), Brown and Rozeff (1978)], and because time series analysis has implications for hypotheses advanced in the smoothing literature [Ronen and Saden (1981)].

Most studies use Box-Jenkins [BJ] procedures, the benefits of which are described by Lorek (1979, p191):

First, the BJ family of models represents a powerful group of discrete linear stochastic processes. Second, since the specification of a complete economic theory of the firm under uncertainty is not available presently, the use of BJ to generate expectation models is an attractive alternative...

BJ procedures require the researcher to identify a preliminary model of the data, estimate the model, and then modify the model based on diagnostic tests. The
predictability criterion is generally used to select a premier quarterly earnings model.

The use of BJ models introduces several research design problems. First, BJ procedures require the availability of a large number of observations. Quarterly accounting data provide a much larger data base, although introduce seasonal factors into the analysis. A common technique used to account for seasonality is to measure the time series using quarterly differences. However, Lorek and Bathke (1984) report that studies which assume seasonality in estimating "premier models", result in higher forecast errors when in fact the firms are non-seasonal. The use of large time series data bases also increases the problem of "survivorship bias".

Early time series studies recommend different premier models of quarterly earnings behaviour. These include a moving average model [Griffin (1977), Watts (1975)], an autoregressive model [Foster (1977)] and a combined

---

5 Lorek and McKeown (1978) report that predictions using BJ methodology are quite poor for data bases with less than 25 observations.

6 However, Ball and Watts (1979) provide evidence that the autocorrelations of a sample of surviving firms does not differ from random samples.
autoregressive moving average model [Brown and Rozeff (1978; 1979)]. A large number of studies have followed, re-testing these models and examining further issues related to the time series properties of annual and interim earnings numbers. 

Research findings suggest that quarterly time series contain an adjacent quarter component and a seasonal component. Bathke and Lorek (1984) report that the combined model of Brown and Rozeff (1979) provides the most accurate forecasts. They also find that the fourth quarter has the highest forecast errors. This suggests that the fourth quarter is affected by the "dumping" of accruals and deferrals when interim reporting systems are brought into correspondence with (actual) annual figures.

A few studies examine the behaviour of quarterly accounting numbers without the use of BJ models. Kiger (1974) analyzes the quarter to annual sales (income) ratios for 1235 (881) companies over the period 1966-1969. Kiger reports that quarterly sales exhibit about half the "substantial" volatility that is present in net income. Givoly, Ronen and Schiff (1978) and Alford and Edmonds (1981) compare audited and

---

7 Ball and Foster (1982) provide a useful review of this literature.
non-audited quarterly reports for differences in volatility (quarter to year ratios of sales, net income and EPS) and smoothing (net income to sales ratio). Their underlying rationale is that audit involvement in quarterly reports should reduce management's ability to smooth interim earnings and therefore audited reports should exhibit greater volatility. Both studies question the benefits of auditor association with quarterly reports, after finding no systematic differences in the data.

Most time series studies provide empirical evidence on the statistical properties of quarterly numbers. However, without knowledge of "transfer functions" to map accounting series into events and decisions, the potential usefulness of time series analysis is ambiguous (Kennelly 1972). With the exception of Kiger (1974), Givoly, Ronen and Schiff (1978) and Alford and Edmonds (1981), much of the importance of time series research is in the use of the observed properties in subsequent research, to investigate events and relationships of interest.

The lack of reported interim accounting numbers prior to 1976 in New Zealand (noted in chapter two) precludes the ability to undertake a serious time series analysis.
2.5 Predictive value research

2.5.1 Decision models

The first empirical studies concerned with the predictive value of interim earnings are Green and Segall (1966; 1967), who conclude that first quarter reports as presently prepared are of little help in forecasting (annual EPS). Provoked by this conclusion, subsequent studies by Brown and Niederhoffer (1968), Reilly et al (1972), and Coates (1972) increased the number of observations, employed different forecast models and forecast error metrics, used all four quarterly reports, and used different components of quarterly earnings (e.g. quarterly sales).

Abdel-khalik (1980) points out that during this "first generation" research the emphasis shifted from evaluating alternative accounting methods of determining interim income [as in Green and Segall (1966)] to the usefulness of interim earnings in predicting annual earnings. The change in focus to predictive ability naturally developed from a climate where the "usefulness" of information achieved prominence in accounting theory, with the report of the Committee to Prepare a Statement of Basic Accounting Theory (AAA 1966). The "predictive ability" as a criterion for usefulness was propagated by Beaver,
Kennelly and Voss (1968). They suggest that alternative accounting measurements can be evaluated in terms of their ability to predict events of interest to decision makers. Since all decisions involve predictions, the advantage of this criterion is that the predictive ability of accounting data can be explored without waiting for specification of a decision model.

While many researchers have used quarterly earnings in BJ time series models, only a few studies [for example Lorek (1979), Hopwood, McKeown and Newbold (1982)] use rigorous statistical models developed from time series research to specifically address the earlier issue of predicting annual earnings from reported interim data.

Hopwood, McKeown and Newbold (1982) examine the improvement in the ability to forecast annual earnings using quarterly rather than annual earnings for 267 firms. They report that models estimated on just a few years of annual data give prediction errors of 35-60 percent higher than models using quarterly figures. Moreover, when quarterly data is used the prediction errors will be 15-21 percent higher than quarterly data.

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8 The predictive ability criterion, is also supported in the U.K. [see Carsberg, Hope and Scapens (1974)].
which utilises the current quarter since the last annual report.

Interim disclosures have also been used to predict estimates of beta. Griffin (1976) examines whether the disclosure of quarterly earnings and dividend payout represents a timely and competitive source of information for the assessment of risk. The results indicate that risk estimates based on quarterly earnings and dividends reflect information about a security's relative risk and about changes in relative risk. Griffin (1976) is part of a small collection of studies that find the assessment (or prediction) of beta can be improved with financial statement numbers. However, a more recent study by Elgers (1980) finds that after controlling for measurement errors in estimated OLS betas, accounting variables do not produce more accurate estimates of beta. Elgers (1980) did not include accounting variables from interim reports.

9 Beta is the capital asset pricing model's measure of risk. It is typically estimated using the market model.

10 Examples of this research include, Beaver, Kettler and Scholes (1970), Bildersee (1975), and Rosenberg and McKibben (1973).

11 Nevertheless, accounting variables can be useful in producing estimates of risk for unlisted securities.
2.5.2 Decision makers

A second predictive ability approach is to focus on the use of accounting numbers by decision makers, rather than decision models. One line of research has used quarterly earnings, in time series models, as a benchmark to assess the usefulness of management forecasts [Lorek, McDonald and Patz (1976)] and financial analysts’ forecasts [Brown and Rozell (1978), Collins and Hopwood (1980)].

Early studies report mixed results on the predictive ability of financial analysts and managers. The general consensus of more recent research is that security analysts are superior forecasters relative to the univariate time series models commonly employed in the literature. Brown et al (1987a) show this advantage is attributed to (1) better utilization of information (e.g., earnings reports of other firms, management forecasts) and (2) acquisition of information disclosed between the last quarterly reporting date and the issue of the forecast (e.g. strikes, awarding of government contracts).

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12 Refer to Ashton (1974) and Libby (1975) for a discussion on the application of the predictive ability criterion to decision makers.

The general focus of predictive value research using decision makers' predictions has not been on interim reporting per se. It has merely used quarterly earnings to develop time series models to provide a comparative benchmark for analysts' and management forecasts. A notable exception to this is Abdel-khalik and Espejo (1978) who examine revisions of earnings forecasts by analysts, following quarterly announcements. The results of this and related studies [Brown et al (1980), Abdel-khalik (1980), Abdel-khalik (1983)] are consistent with Value Line revising its forecast annual earnings in the same direction as the quarterly forecast error in all three quarters.

The results of this line of research indicate that interim earnings are useful in predicting annual earnings. This, however, does not mean that predictive value should be the guiding criterion for interim income measurement. Kennelly (1972) notes that this property could be achieved by arbitrarily defining reported earnings as a constant; yielding a time series which is perfectly predictable but probably useless. If observed irregularities in accounting time series are associated with the properties of underlying events and decisions, the removal of irregularities to facilitate prediction would reduce the value of accounting information.
Research on the predictive ability of reported interim numbers is useful for accounting policy makers if the prediction of annual earnings and beta are objectives of interim reporting. The FASB (1978) describes several objectives of interim reporting, including the forecasting of annual earnings. The forecasting role of interim reporting has been the subject of both empirical research [Green (1964)] and analytic research [Hakansson (1977)]. Greenball (1971), Peasnell (1974), and FASB (1978) point out the (non-predictive) importance of interim reporting as a feedback mechanism. Furthermore, Brown et al. (1987a, 1987b) suggest that predictive value is not the relevant criterion for evaluating expectation models in event studies, rather it is the unexpected returns associated with information arrival.

The lack of data to build time series models (noted in section 2.4) limits the ability to investigate the predictive ability of interim numbers. Furthermore, financial analysts’ did not publicly release annual or interim earnings forecasts in New Zealand during the 1970’s.

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14 Revsine (1971) points out the importance of specifying the objectives of prediction.
2.6 Market based accounting research

Market based accounting research can be conveniently partitioned into: (1) research examining the market impact of accounting releases, and (2) research examining the market impact of accounting regulations.\(^ {15}\)

2.6.1 Market impact of accounting releases

An early attempt to examine the impact of accounting data on security prices was made by Benston (1967), who examines the association between changes of annual and quarterly variables (including quarterly earnings and sales data) and unexpected stock returns.

The seminal work in this area is Ball and Brown (1968), in which the unexpected (sign) changes in annual earnings are correlated with the mean residual stock returns. Ball and Brown (1968) initiated a research design that has been used by many subsequent researchers to accumulate evidence on the "information content" of accounting earnings.

\(^ {15}\) Lev and Ohlson (1982) provide a comprehensive review of market based accounting research. More recent surveys are by Foster (1986) and Watts and Zimmerman (1986).
The Ball and Brown method has been applied to announcements of interim earnings. The cumulative evidence of studies by Brown (1972), Brown and Kennelly (1972), Foster (1977), Foster, Olsen and Shevlin (1984) and Hagerman, Zmijewski and Shah (1984) show a positive association between the sign and magnitude of quarterly earnings forecast errors and risk adjusted stock prices. Research on the timeliness of interim (and annual) announcements has also found an impact on the sign and magnitude of abnormal securities returns [Chambers and Penman (1984), Kross and Schroeder (1984)].

The market impact of the components of interim earnings has been researched by Hopwood and McKeown (1985). They examine whether the information content of interim earnings, for a sample of 238 firms in the period 1962 to 1979, is due to quarterly sales numbers, expense numbers, or both. The results suggest that while the market "keys in" on the EPS figure, both sales and expense numbers contain marginal information content.

An alternative to the Ball and Brown design, is to focus on the variance (rather than the mean) of the residual returns. This method was first applied by Beaver (1968) who examines annual earnings announcements. Beaver's approach has been used to examine quarterly earnings [May (1971), Jordan (1973)].
Kiger (1972) applied variance tests on both price and volume changes. Morse (1981) also examines daily price changes and trading volume during the days surrounding the announcement of quarterly and annual earnings, for 25 NYSE/ASE stocks and 25 OTC stocks in the period 1973-76. Increased trading volume activity and increased security return variability at the time of earnings releases is observed for both samples.

Several studies [for example, Joy, Litzenberger, and McEnally (1977), Watts (1978), Rendleman, Jones and Latane (1982)] report the existence of abnormal returns following quarterly earnings releases. These results are consistent with either market inefficiency or a misspecification of the pricing model. A recent study by Foster, Olsen and Shevlin (1984) indicates that results of previous studies are caused by a misspecified pricing model.16

2.6.2 Market impact of accounting regulation

One class of research has attempted to examine the impact of (disclosure) regulations on security prices. Stigler's (1964) analysis of the Securities Act 1933 on the return distributions of new issues and Benston's (1973) analysis of firms affected by the Securities and Exchange Act 1934 disclosure regulations, are two early

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16 Refer to Dyckman and Morse (1986) for a more complete analysis on market efficiency.
examples of this category of research. Both authors conclude that securities legislation had little or no impact on the distribution of security priced returns.17

Ingram and Chewning (1983) also investigate whether the regulated disclosures in the 1933 Act and the 1934 Act affected the relative timing of price changes that constitute annual returns. They find that interim reports had little impact on investment return vectors during the pre-Act period. In contrast, post-Act prices adjusted more rapidly toward their final value for firms that interim reported compared to firms that reported annual numbers only. Ingram and Chewning (1983, p.578) suggest a possible explanation:

that fewer alternative sources of information were available during the post-Act periods. Thus, interim reports became relatively more important sources of information. This evidence is consistent with the hypothesis that the Acts had a negative impact on the flow of certain types of information to the market.

Other researchers have examined specific disclosure requirements (e.g. segment data, foreign currency translation, replacement cost data) subsequent to the

17Their results and interpretation of their results evoked a number of criticisms. These are summarised in Beaver (1981, p.198).
passage of the 1933 and 1934 Acts.\textsuperscript{18} In general, the results of these show a lack of consistency.\textsuperscript{19} Although for some issues (e.g., ARS No 190, replacement cost data) the results are consistent and conclusive.

The impact of interim reporting is examined by McNichols and Manegold (1983), who investigate the return variance of annual earnings announcements surrounding the imposition of quarterly reporting by the ASE for a sample of 34 firms. The evidence supports the notion that a reduction in the relative information content of annual earnings announcements follows the introduction of quarterly reporting. This result is consistent with Emanuel (1984) who examines 1196 annual earnings announcements in New Zealand over the period 1967 to 1979. In comparing his results to Ball and Brown (1968), Emanuel (1984, p.36) observes:

\begin{quote}
in spite of much slower reporting, there is much bigger announcement date share price movement. While part of the explanation may lie in the use of a weekly share price base, rather than monthly data, a more likely explanation is the paucity of interim reporting (in New Zealand relative to U.S.A.) during the test period.
\end{quote}

\textsuperscript{18}Lev and Ohlson (1982) provide a comprehensive review of this literature.

\textsuperscript{19}Chow (1983) reports that 14 out of 27 studies find a significant change in stock prices due to regulation.
2.6.3 Methodological issues

The methodological issues of security price studies are well documented.\textsuperscript{20} A major methodological problem relates to the difficulty in determining the critical date(s) which capture the impact of the event under review.\textsuperscript{21} In a forward looking capital market the abnormal performance at the event date will reflect only the unexpected impact of the event - the expected benefit will be already impounded in the stock price. This problem is particularly severe for studies examining voluntary accounting changes, as the probability of the change immediately prior to the change would be close to 1 if the firm was expected to benefit from the change.

A second major problem in market based accounting research is controlling for clustering and confounding events.\textsuperscript{22} Earnings and dividend announcements are

\textsuperscript{20} Bowman (1983) and Brown and Warner (1980) discuss research design issues of announcement studies; Foster (1980), Schwert (1981), Lev and Olson (1982), Ricks (1982) discuss research design issues of examining the market impact of regulation.

\textsuperscript{21} The choice of event dates is a tradeoff between capturing the event date by using a longer event period and increasing the power of the test (increasing the signal to noise ratio) with a shorter period [Brown and Warner (1980)].

\textsuperscript{22} Compare mandatory accounting change studies with earnings announcements studies, where the event date for each firm is dispersed over calendar time and the impact of confounding events is assumed to be non-systematic and minimized through aggregation. (Footnote Continued)
typically made contemporaneously in New Zealand. Accounting policy changes are usually announced along with earnings. Similarly regulations will often cover several matters. The clustering of events at a common date increases the cross-sectional dependence of the returns, causing bias in the significance tests, which can substantially affect the ability to detect abnormal returns [Brown and Warner (1980)]. Foster (1980) suggests several possible approaches to control for the problem of confounding events.

Ball (1980) considers that share price studies are unlikely to reveal the effect of (voluntary or mandatory) accounting changes because the standard experimental design views the change in accounting policy as an exogenous event - the assumption is of a stationary environment disturbed only by a change in accounting policy. Changing economic conditions could induce managers to revise their financing, production and investment decisions and their choice of accounting policy. Mandatory accounting changes can also be viewed as being determined, in part, by the economic environment. As a result it is difficult to identify the impact of changes in the environment from that of

(Footnote Continued)
Voluntary changes in accounting policy are often industry related which increases the problem of cross-sectional dependency of events.
accounting regulations. In addition, the cost-benefit of accounting policy change is likely to be small in comparison to the numerous events that affect stock prices. Hence, the probability of detecting an effect of a change in accounting policy among the normal variance of market model residuals is remote. These chances are reduced even further with smaller sample sizes.

2.6.4 Discussion
This section discusses the reasons for not adopting a market based research approach in this study (by examining either the information content of the interim announcements or the interim reporting regulations).

Market based accounting research demonstrates (1) that interim announcements contain information that is reflected in price behaviour, and (2) the more frequently companies report, the less information content there is in the release of the annual income number. It would be feasible to conduct an information content study on New Zealand interim reports by following the approach in McNichols and Manegold (1983).  

\[2^3\] A study using price variance analysis has the advantage of not having to specify an earnings expectation model.
undoubtedly important to our understanding of market behaviour and the impact of alternative information sources, it has limited importance for accounting policy regulators. First, the link between security price behaviour and information releases does not provide a ranking of the desirability of alternative methods of accounting (Gonedes and Dopuch 1974). For example, it is difficult to devise an event study that will enable accounting policy makers to rank the discrete, interval, or combination methods of interim income determination. Second, evidence on the market reaction to interim information focuses on the benefits of interim reporting as an information source; whereas accounting policy regulators also need to know about the costs of their decisions. Third, indicative New Zealand evidence [Emanuel (1984)] already exists on this issue.

Data and methodological problems limit the ability to analyze the market impact of the regulation of interim reporting in New Zealand. First, it is difficult to a priori argue that the act of regulating interim reporting would impact stock prices. Second, the event history (described in Chapter Three) indicates that the probability of interim reporting being mandated was high. That is, the unexpected impact on stock prices, if any, is low. Furthermore, the event history precludes a Noreen and Sepe (1981) "price reversal"
approach. Third, it is not possible to isolate the effects of the regulation of interim reporting from other confounding events. The Stock Exchange introduced requirements for preliminary announcements and the timeliness of reports at the same time as interim reporting requirements.

2.7 Corporate profile research
A developing line of research is to examine variables (typically corporate characteristics) associated with accounting policy choice. In the absence of articulated theories, the selection of variables in early studies was ad hoc. Recent research has given attention to developing and empirically testing a positive theory of managers' motivations for accounting policy choice.

Positive theory research focuses on the cash flow effects of accounting procedures and the impact on managements' wealth, as the motivation for managers' choice of accounting policy and reaction to proposed (or enforced) accounting standards. Watts (1977), Watts and Zimmerman (1978) and others, postulate that taxes, political costs, management compensation, information production costs, debt covenant restrictions and other contractual arrangements incorporating financial statement numbers, are factors which affect managers' wealth and hence have
motivational and consequential implications for accounting policy choice.\textsuperscript{24}

This line of research has been integrated with market based accounting research to explain cross-sectional stock price effects by (positive theories of) the economic consequences of accounting policy choice. Holthausen and Leftwich (1983) and Watts and Zimmerman (1986) summarize these studies. Generally, the cross-sectional share price impact of mandated accounting changes is related to contracting and political cost variables, although not all variables have the same sign or are significant (at conventional levels).

The major methodological problems of positive accounting research are (1) developing proxy variables that represent the contracting and political process, (2) specifying cross-sectional models, and (3) collinearity among the contracting variables [Watts and Zimmerman (1986)].

\textsuperscript{24}Holthausen and Leftwich (1983), Kelly (1983) and Watts and Zimmerman (1986) review positive accounting theory research.
2.8 Voluntary disclosure research

This study falls within the area of corporate profile research. It examines the association between corporate characteristics and the voluntary choice of semiannual earnings disclosures in New Zealand during the 1973-76 period.

Very little research in the positive accounting theory literature has concentrated on the choice of accounting disclosure (compared to the numerous studies examining lobbying behaviour and accounting method choice). Research by Salamon and Dhaliwal (1980), Leftwich, Watts and Zimmerman (1981), Trotman and Bradley (1981), Chow and Wong-Boren (1987), and others has begun to accumulate evidence on management's choice of accounting disclosures.

One set of research has examined the corporate characteristics associated with firms that voluntarily release earnings forecasts [Imhoff (1978), Ruland (1979), Cox (1985) and Waymire (1985)].

Imhoff (1978) examines characteristics that are systematically different between firms that publish management earnings forecasts in the Wall Street Journal and those that do not. Characteristics selected for study are based on their potential to influence forecast accuracy. The variability in earnings and the error in security analysts' forecasts
are significantly lower for voluntary forecast disclosure firms than for nondisclosing firms. Conversely, systematic market risk for voluntary forecast disclosure firms is found to be significantly greater (i.e., the firms are riskier) than the systematic market risk of nondisclosing firms.

Ruland (1979) compares the earnings series for a sample of firms reporting earnings forecasts to nonreporting firms. He finds that trend explains relatively more of the earnings variability for reporting firms. However, when equivalent size firms from the same industry are considered, the earnings series for the two groups do not differ with respect to trend adherence.

Cox (1985) extends and improves the work of Imhoff (1978) using a matched-pair design to control for interdependences between test variables. Two of Imhoff's research hypotheses are confirmed. The coefficient of variation in earnings (a measure for earnings variability) is found to be significantly lower for forecast firms. The market value of common stock (a firm size surrogate) is also significant, supporting the notion that forecast firms are systematically larger than nonforecast firms. Systematic market risk, after controlling for earnings variability, is not significant.
Waymire (1985) examines the characteristics of firms and the timing and frequency of management earnings forecasts. He finds that firms that issue forecasts more frequently (repeat forecasters) are characterised by less volatile earnings. While the groups differ in terms of volatility, the forecast errors of the two groups are on average equally accurate, although the forecast horizon is shorter for the nonrepeat group.

A second set of research has examined corporate characteristics associated with the level of disclosure in general [Choi (1973), Firth (1980), Chow and Wong-Boren (1987)].

Choi (1973) and Firth (1980) examine the extent of voluntary financial disclosure and the raising of finance. Choi (1973) uses a general disclosure index to operationalise disclosure and finds that nonBritish and nonAmerican firms increase their level of disclosure in the years prior to raising finance on the Eurobond market. A sample of British firms do not raise their disclosure level and Choi argued that it is due to these firms already having relatively high disclosure levels. Firth (1980) shows that smaller sized firms (i.e., with capitalisations under £50 million) increase their voluntary disclosure when raising equity finance via new issues and rights issues. For large firms no such relationship is found;
raising finance on the equity market has no impact on disclosure levels.

Chow and Wong-Boren (1987) report on the extent of voluntary financial disclosure by a set of Mexican corporations and examine the association with the level of disclosure on three firm characteristics: size, leverage and assets in place. The extent of voluntary disclosure is found to increase with firm size. No significant effects due to financial leverage or assets in place are observed.

A third set of research has examined specific disclosure issues and corporate characteristics [Salamon and Dhaliwal (1980), Leftwich, Watts and Zimmerman (1981), Trotman and Bradley (1981)].

Salamon and Dhaliwal (1980) are interested in the contention that the financial environments faced by large and small firms are systematically different in such a way that the direct and/or opportunity costs of complying with mandatory reporting obligations are relatively larger for small companies. Salamon and Dhaliwal examine the voluntary segment disclosures of diversified firms. They find that diversified firms voluntarily disclosing segment sales and earnings are significantly larger than diversified nondisclosing firms. Also, the firms that disclose segment financial
data are more likely to be those issuing long term capital to the public.

Leftwich, Watts and Zimmerman (1981) investigate the cross sectional variation of reporting frequency to reduce the agency costs associated with the firm’s capital structure (market value of the firm, the ratio of debt to firm value, the ratio of preferred stock to firm value), its assets structure (assets in place), and its use of other monitoring devices (the number of outside directors, the exchange listing). Inertia (the change in reporting frequency between 1937 and 1948) is also investigated. A significant inertia and stock exchange effect is reported. However, the results regarding the capital and asset structures are largely anomalous. Overall, LWZ have little success in explaining the cross sectional variation in interim reporting frequency using agency theory variables.

Trotman and Bradley (1981) investigate the characteristics of companies that might be associated with disclosure of social responsibility information. The results suggest that companies which provide social responsibility information are on average larger, have higher systematic risk and place stronger emphasis on the long term in making decisions than companies that are nondisclosers. In addition, for companies disclosing social responsibility information, a
positive association is found between the amount of the social responsibility disclosure and the size of the company, the degree of social constraints faced by the company and the emphasis the company places on the long term in making decisions.

2.9 Summary
This chapter has reviewed prior research to provide a background for this study. Research focusing on interim reports has addressed issues ranging from forecast accuracy to the information content of interim reports as reflected in security prices. The research issue addressed in this study is whether firms which voluntarily disclose interim reports are representative of nonreporting firms.

This chapter has also reviewed the major studies that have examined the association between voluntary disclosure and corporate characteristics. A summary of these studies is provided in Table 2-1.

The next chapter provides further background material for the study and examines the institutional arrangements for financial reporting in New Zealand and the history of interim reporting in New Zealand.
Table 2.1
Summary of empirical studies examining the corporate characteristics associated with voluntary disclosures

<table>
<thead>
<tr>
<th>Study</th>
<th>Disclosure Issue</th>
<th>Tests</th>
<th>Variables examined</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choi (1973)</td>
<td>General disclosure index</td>
<td>U</td>
<td>*Eurobond issue</td>
<td>+</td>
</tr>
<tr>
<td>Imhoff (1978)</td>
<td>Earnings forecast</td>
<td>U</td>
<td>*Earnings volatility</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>*Security analyst’s prediction errors</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>*Systematic risk</td>
<td>-</td>
</tr>
<tr>
<td>Ruland (1979)</td>
<td>Earnings forecast</td>
<td>U</td>
<td>*Time series model prediction errors</td>
<td>+</td>
</tr>
<tr>
<td>Firth (1980)</td>
<td>General disclosure index</td>
<td>U</td>
<td>*New Issues, rights issues</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>*Size (capitalisation)</td>
<td>+</td>
</tr>
<tr>
<td>Salamon and Dhaliwal (1980)</td>
<td>Segment sales and earnings</td>
<td>U</td>
<td>*Size (capitalisation)</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>*Issuing long term capital</td>
<td>+</td>
</tr>
<tr>
<td>Leftwich, Watts and Zimmerman (1981)</td>
<td>Interim reporting frequency</td>
<td>P, R</td>
<td>*Assets in place</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>*Debt leverage</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>*Preferred stock leverage</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>*Outside directors</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>*Inertia</td>
<td>+</td>
</tr>
<tr>
<td>Trotman and Bradley (1981)</td>
<td>Social responsibility disclosure.</td>
<td>U</td>
<td>*Size</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>*Systematic risk</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>*Social pressure</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>*Managements decision horizon</td>
<td>+</td>
</tr>
<tr>
<td>Cox (1985)</td>
<td>Earnings forecast</td>
<td>U</td>
<td>*Earnings volatility</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>*Security analyst’s prediction errors</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>*Systematic risk</td>
<td>-</td>
</tr>
<tr>
<td>Waynire (1985)</td>
<td>Frequency of voluntary earnings forecasts</td>
<td>U</td>
<td>*Earnings volatility</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>*Size (total assets)</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>*Accuracy</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>*Forecast horizon</td>
<td>-</td>
</tr>
<tr>
<td>Chow and Wong-Boren (1987)</td>
<td>General disclosure index (by Mexican firms)</td>
<td>R</td>
<td>*Firm size</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>*Debt leverage</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>*Assets in place</td>
<td>-</td>
</tr>
</tbody>
</table>

a Bazley, Brown and Izan (1985) and Wong (1988) also examine the voluntary disclosure issue (of leases and current cost data respectively). These studies are excluded from this table because they focus on accounting measurement issues related to the disclosure rather than the act of disclosure.

b The tests employed are:
U = Univariate: t-test and/or Mann-Whitney U test.
P = Probit probability model.
R = OLS regression.

c Results:
+ (-) = positive (negative) coefficient
S = Significant
NS = Not significant.

d The annual/semiannual report results are reported for Leftwich, Watts and Zimmerman (1981) study.

e Leftwich, Watts and Zimmerman (1981) ran separate regression for ASE and NYSE exchange listings. This resulted in differences both signs and significance for some variables.
CHAPTER THREE

INSTITUTIONAL FACTORS

Accounting disclosure rules can be viewed as an institutional arrangement for information-production and dissemination.\(^1\) This chapter discusses the institutional factors of importance to this study. Section 3.1 discusses the institutional arrangements for financial reporting in New Zealand. The development of interim reporting is outlined in Section 3.2 and Section 3.3 examines the extent of voluntary interim reporting. Section 3.4 provides a discussion and interpretation of the Stock Exchange Association's motivation for interim reporting regulation and Section 3.5 examines the related lobbying behaviour. The principal findings of Chapter Three are summarized in Section 3.6.

\(^1\)The importance of institutional factors in accounting research is recognized by researchers in accounting [Ball and Foster (1982)] and economics [Wilson (1983)]. See also Merino, Koch and MacRitchie (1987) for the importance of basing research design on an adequate historical inquiry.
3.1 Institutional reporting arrangements

The institutional arrangements requiring New Zealand companies to disclose accounting information arise from three main sources: (1) legislative provisions, (2) professional accounting standards, and (3) stock exchange regulations.\(^2\)

3.1.1 Legislative provisions

Legal authority for financial disclosures is contained in the Companies Act 1955, which was modelled on the United Kingdom Companies Act 1948. In 1968 the Mcarthur Committee to review the Act was established. This committee produced an interim report in August 1971 and a final report in March 1973. These reports did not lead to a new Companies Act, although many of the recommendations of the Macarthur Committee have been incorporated into the 1955 Act by subsequent amending legislation. The 1955 Act is still operative and is currently undergoing a second major review [Law Commission (1987)].

The Companies Act 1955 is more concerned with disclosure requirements than with accounting measurement issues. It contains a general requirement

2 The Securities Commission was established under the Securities Act 1978. Prior to 1975, little support for a regulatory commission existed [McLay (1982, p.111)].
that every balance sheet and profit and loss account must show a "true and fair view". Specific disclosure provisions are detailed in the Eighth Schedule to the Companies Act. The minimum disclosure requirements have remained essentially unchanged since the Act was first incorporated. However, the interpretation of "true and fair" is likely to have changed over the period studied, due to the influence of professional accounting standards.³

The disclosure provisions in the Eighth Schedule apply only to annual accounts. The Act does not require interim accounting disclosures.

3.1.2 Professional accounting standards
The New Zealand Society of Accountants (NZSA) is the only professional body with statutory authority to "control and regulate the practice of the profession of accountancy in New Zealand". While many accounting standards have disclosure requirements the NZSA has generally concerned itself with measurement issues rather than disclosure issues.⁴

³There still remains substantial uncertainty over the meaning of this expression [Johnston, Edgar and Hays (1982, pp. 259-262)].

⁴The NZSA has produced only one standard (SSAP-9) concerned solely with disclosure; which marginally increases the requirements of the Eighth Schedule. As
A convenient starting point for this study is October 1973, when the Council approved the publication of Statements of Standard Accounting Practice (SSAPs). The first SSAP was approved in November 1974 and effective from January 1975. The importance of SSAPs is expressed in the Explanatory Foreword (para. 1.2):

Accounting standards are designed to improve the quality and uniformity of reporting and introduce a definitive approach to the concept of what is a true and fair view.

SSAPs have no force at law. The Explanatory Foreword requires members of the NZSA to comply with SSAPs. Hence, SSAPs provide an internal set of standards to give credibility to the auditing profession [Wilson (1983)].

There are no professional standards that impose interim reporting or prescribe interim accounting procedures. However, given the importance of professional accounting standards in the recording and reporting process and the importance in ex post facto research of documenting potentially confounding events, Table 3.1 schedules the SSAPs issued by the Society during the period 1974 to 1979.

(Footnote Continued)

yet there are no accounting standards requiring segment disclosures or the disclosure of related party transactions.

5An earlier history of the NZSA is provided by Zeff (1979).
### Table 3.1

SSAPs issued: 1974 to 1979

<table>
<thead>
<tr>
<th>Issued date</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Effective date)</td>
<td></td>
</tr>
<tr>
<td>Nov 1974</td>
<td>SSAP-1 Disclosure of Accounting Policies (1 Jan 1975)</td>
</tr>
<tr>
<td>Dec 1974</td>
<td>SSAP-2 Accounting for Associated Companies (1 April 1975)</td>
</tr>
<tr>
<td></td>
<td>(Equity Accounting)</td>
</tr>
<tr>
<td>Aug 1975</td>
<td>SSAP-3 Depreciation of Fixed Assets (1 April 1975)</td>
</tr>
<tr>
<td>Nov 1975</td>
<td>SSAP-4 Valuation and Presentation of Inventories in the Context of the</td>
</tr>
<tr>
<td></td>
<td>Historical Cost System</td>
</tr>
<tr>
<td>Dec 1976</td>
<td>SSAP-5 Events Occurring After Balance Date (31 March 1977)</td>
</tr>
<tr>
<td>Aug 1976</td>
<td>SSAP-6 Materiality in Financial Statements (31 March 1977)</td>
</tr>
<tr>
<td>Dec 1977</td>
<td>SSAP-7 Extraordinary Items and Prior Period Adjustments (31 March 1978)</td>
</tr>
<tr>
<td>Aug 1978</td>
<td>SSAP-8 Consolidated Financial Statements (31 March 1979)</td>
</tr>
<tr>
<td>Aug 1978</td>
<td>SSAP-9 Information to be Disclosed in Company Balance Sheets and</td>
</tr>
<tr>
<td></td>
<td>Profit and Loss Accounts</td>
</tr>
<tr>
<td>Dec 1979</td>
<td>SSAP-11 Expenditures Carried Forward to Future Accounting Periods (31</td>
</tr>
<tr>
<td></td>
<td>March 1980)</td>
</tr>
</tbody>
</table>
3.1.3 Stock exchanges listing requirements

The first stock exchanges in New Zealand were established in the early goldfields in the late 1800's. In 1915, the Stock Exchange Association of New Zealand (SEANZ) was formed to govern the five independently operated exchanges: Auckland, Christchurch, Dunedin, Invercargill and Wellington. The SEANZ was superseded by The New Zealand Stock Exchange in July 1983.

The SEANZ Listing Manual contains the only institutional requirements in New Zealand for interim (half yearly) reports. The introduction of interim reporting is inseparably linked with the attempts to introduce listing requirements by the SEANZ. Hence a brief history of the SEANZ listing requirements follows.

The first listing requirement issued by the SEANZ contained requirements for the disclosure of financial information. In 1964 the Annual Conference of the SEANZ resolved that from 1 April 1965 companies be compelled to comply with the listing requirements.

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6 Zeff (1979, p.69) records the date of the first requirements as being 1935-36. McLay (1982, p.81) presents evidence to support an earlier date of 1929.

7 It appears that SEANZ were unsuccessful in enforcing compliance with revised listing agreements on companies listed earlier, when requirements were less onerous [Scrutineer (1959)].
This date was extended to October 1965, by the February 1965 Conference, to allow for the Listing Agreement to be redrafted in the form of a continuing document rather than as an act of being listed. The annual conference of February 1966 received a draft manual and after making some amendments, adopted the manual and proposed a trial "exposure" period. Only five submissions were received on the draft manual, resulting in some minor changes. The Listing Manual was finally issued in August 1967.  

3.2 The development of interim reporting in New Zealand
Interim reporting was first discussed by the SEANZ at the Annual General Meeting in February 1946. The Auckland Exchange forwarded a remit that:

Companies paying only one dividend annually should supply to the SEANZ a statement of the company's prospects at the end of the first six months of the financial year in lieu of an interim dividend announcement.

Most speakers refer to the proposal as being too drastic. In particular, the Christchurch Stock Exchange referred to interim reports as being possibly misleading and suggested that directors would not take

8The Listing Manual contains the Listing Agreement and the continuing requirements of the SEANZ.
the responsibility in committing themselves. The remit was not rejected, but was reduced to a request only.

In February 1957, following the introduction of the Companies Act 1955, the SEANZ removed from its listing requirements all regulations dealing with accounting procedures. A year later, at the 1958 annual conference, the SEANZ adopted a recommendation that listed companies provide interim or half yearly reports. This recommendation was couched in vague terms:

It is not suggested that an interim report be more than a brief comparison with the results of the previous corresponding period, together with some advice of the current trading position [Scrutineer (1959)].

This vagueness was seen as a concession to those critics who considered the SEANZ’s requirements are too far-reaching and ahead of those in the Companies Act 1933 regarding accounting matters [McLay (1982, p.86)].

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9 It is notable that in February 1940 the Christchurch Exchange also opposed the request to increase the disclosure of firms on the "unofficial list". The unofficial list was introduced to increase the size of the market by allowing the trading of securities (at a higher rate of commission) that did not satisfy the requirements of the SEANZ.

10 A second disclosure recommendation was for the diagrammatical breakdown of each £1 of sales to "combat the suggestion that many company profits are excessive."
In 1962 an interim reporting requirement was incorporated into the Listing Agreement for the first time, when it was strongly recommended (but not mandatory):

That half-yearly reports be issued to all shareholders

When the first Listing Manual was issued in 1967, half yearly reporting remained a recommendation only.

In September 1971, the SEANZ circularized companies of proposed listing amendments, which included: (1) a preliminary profit announcement for financial years commencing after March 1972, and (2) a half-yearly report for financial years commencing after March 1973. "Amendment List No 1" to update the August 1967 edition of the Listing Manual was issued in November 1971. The new manual introduced the following:

For financial years commencing after March 31, 1973 each company having its ordinary shares listed is to issue a half-yearly report to its shareholders, either individually or through the association. A copy is to be sent to the association at the time of the first release of such report. (This requirement has been a recommendation since 1962). The report need not be audited.\[11\]

\[\text{11 McAllister (1972).}\]
Robb (1972) criticized the new requirements for not being specific and suggested an alternative phrasing similar to Australian listing regulations.

In September 1974, the SEANZ decided to standardize dividend, preliminary and interim announcements. It was also decided to impose a maximum four month time limit for interim and preliminary announcements. In March 1975, the draft preliminary and half yearly reporting requirements were sent for comment to the New Zealand Society of Accountants and to the Institute of Chartered Secretaries. The proposed revisions to the Listing Manual were also published for comment in the Official Record (May, July, August, and November 1975).

Overall, including late replies, 21 submissions were received. Most significant is the request from the Freezing Companies Association (FCA) to exempt its members from the half yearly reporting provisions. A series of meetings to discuss the new proposals was held in the four main centres. The meetings were reasonably satisfactory (from the point of view of the SEANZ), except the Dunedin meeting of 28 November 1975 which expressed opposition to the quantification of the profit and tax figures in the interim report.

12 The lobbying activity of the FCA is discussed in Section 2.5.
In February 1976 a new Listing Manual was released, and
(1) introduced a requirement for dividend announcements
(for the first time), (2) increased the content of
preliminary annual announcements, and (3) specified the
minimum disclosure requirements for half yearly
announcements. The half yearly report was required to
disclose the following minimum items:

(a) Audited or unaudited.
(b) Accounting period and concluding date.
(c) Group profit figure, described as
   necessary, normally after taxes and
   minority interests.
(d) Comparable figures for the previous
corresponding period.
(e) The report may contain a warning as to
   the lack of relativity between half yearly
   and annual results. In that case
   the previous full accounting year's
   comparable figures are to be shown.
(f) Comment on unusual factors including
   non-recurring items.
(g) It is recommended that group turnover be
   stated.
(h) Figures may be rounded as appropriate.

These requirements remained essentially unchanged in
the revised August 1981 Listing Manual.

Summary
Interim reporting requirements are part of a "package"
of disclosures and regulations imposed on listed
companies by the SEANZ. Figure 3.1 summarizes the
attempts to impose interim reporting by the SEANZ.
There are three distinct phases of development. First,
the period prior to 31 March 1974 can be classified as
voluntary. For much of this period the SEANZ
recommended that listed companies make interim disclosures, but no mandatory requirements existed. In the late 1960s the SEANZ revised their Listing Agreement as a continuing document, developed a Listing Manual, and began to uniformly require compliance. The 1971 amendment to the Listing Manual initiated the second phase of interim reporting when the frequency of reporting was mandated, although the content of half yearly disclosures remained unspecified or voluntary. The third phase began 30 June 1976 when both the content and frequency of interim reports was specified.
Figure 3.1
Summary of the SEANZ's efforts to introduce interim reporting

February 1946
AGM "request"
Listing Agreement "strongly recommended"
frequency mandated content voluntary (effective for years ended March 1, 1974)

February 1958
AGM "recommendation"
Listing Manual introduced

May 1962
Listing Manual

August 1967
Listing Manual amended

November 1971
f
February 1976
Listing Manual amended

August 1981
Listing Manual amended

f
frequency mandated content mandated (effective for years ended June 30, 1976)
3.3 The extent of voluntary interim reporting

This section presents evidence on the extent of interim reporting prior to 1976, when the content of interim reports was mandated. Table 3.2 provides a frequency distribution of interim announcements reported in the Official Record for certain calendar years.

The principal data source covering listed securities during the early 1970s (and prior) is the Official Record of the Stock Exchanges of New Zealand. In 1959, an amendment to the Listing Agreement required all companies to forward a copy of their annual accounts to the editor of the Official Record. Prior to this date, the Official Record contained a section dealing with company's annual accounts, but did not systematically report interim (or preliminary annual) announcements. Hence 1960 is a natural starting point for Table 3.2.

The emphasis in Table 3.2 is placed on the period 1970 to 1976, as this is an important period for interim reporting and also because of the available historical data sources.

In 1971 and 1972 the Official Record focused its "Company Reports" column on preliminary (annual) announcements and as a consequence the number of
Table 3.2
Interim reporting practice of New Zealand listed companies

<table>
<thead>
<tr>
<th>Year</th>
<th>Number reported in the Official Record</th>
<th>Level of earnings disclosure</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Comment only</td>
<td>Sign change</td>
<td>Percentage change</td>
</tr>
<tr>
<td>1960</td>
<td>13</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>1970</td>
<td>112</td>
<td>21</td>
<td>61</td>
</tr>
<tr>
<td>1971</td>
<td>37</td>
<td>7</td>
<td>10</td>
</tr>
<tr>
<td>1972</td>
<td>9</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>1973</td>
<td>117</td>
<td>19</td>
<td>42</td>
</tr>
<tr>
<td>1974</td>
<td>132</td>
<td>17</td>
<td>52</td>
</tr>
<tr>
<td>1975</td>
<td>154</td>
<td>19</td>
<td>57</td>
</tr>
<tr>
<td>Jan to June 1976</td>
<td>123</td>
<td>14</td>
<td>39</td>
</tr>
<tr>
<td>July to Dec 1976</td>
<td>46</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

a. Table 3.2 excludes overseas companies and mining companies on the Official Record's quotation list. Both these types of companies were already subject to interim reporting requirements.

b. The level of earnings disclosure is partitioned into four categories:
(1) Comment only: this category includes announcements such as interim results are "satisfactory" or "are in line with budget".
(2) Sign change: this category includes announcements that state whether interim earnings have increased or decreased from the corresponding period in the previous year.
(3) Percentage change: this category includes announcements that state the percentage increase or decrease in interim earnings from the corresponding period in the previous year.
(4) Point estimate: this category includes announcements where a dollar estimate of interim earnings is disclosed.
interim announcements reported was reduced significantly. The emphasis in 1972 appears to be on those companies that reported dollar estimates of interim earnings. The number of interim announcements reported increased in 1973. This was due to the Official Record being redesigned in March 1973. Company news releases were divided into three categories: 'half yearly reports', 'final results in brief' (dealing with preliminary announcement of annual results) and 'news highlights' (special points of interest including information from annual accounts). The Official Record (1973 p.12) noted "this move clearly demonstrates the SEANZ's commitment towards the interim reporting." Some non-compliance to mandated disclosures is evident in the period June 1976 to December 1976.

Table 3.2. demonstrates that interim reporting occurred prior to it becoming a recommended disclosure in the 1962 Listing Agreement. Throughout this whole period there existed a wide variation in the level of interim earnings disclosure. At one end of the scale, Fletcher Holdings Limited's interim report is one and one half pages and contains detailed, quantified disclosures of interim earnings [see Official Record 1960, p.40].

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13 Recall that in 1971 and 1972 the SEANZ proposed to amend the Listing Agreement to include preliminary announcements.
However, most voluntary interim announcements were terse statements about semi-annual activity or results. The following examples are typical of the range of voluntary interim disclosures reported in the Official Record between 1960 and 1976:

**A. S. Paterson & Co. Ltd.**
Interim report to 30/9/60. Sales generally have been higher but this has been coupled with an increase in operating costs. The company's export business has passed through a difficult period with wide fluctuations in commodity prices and as a consequence, group profits are lower than those for the corresponding six months in 1959. Nevertheless profits adequately cover the usual interim dividend of 3%.

**Farrier-Waimak**
Trading for the first six months of the present year has been satisfactory. The company has successfully tendered for sufficient Ministry of Works and County contracts to keep its plant fully occupied for the roading season. The shingle and bitumen plants at Coutts Island are also performing well, outputs being slightly up on the same period last year.

**Dalgety New Zealand Ltd 12/2/76**
Unaudited Group profit for 6 months to 31 December $1,197,000 as compared with loss $399,000 for same period previous year. Turnover $166,292,000 ($141,266,000).

**E. Lichtenstein & Co Ltd 24/2/76**
Profitability for 6 months to 31 December is satisfactory.

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15 Official Record (1960, p.62).
16 Official Record (1976, p.60).
17 Official Record (1976, p.60).
3.4 Motivation for regulation

In discussing the development of a regulation (in this case interim reporting) it is necessary to assume a theory which explains (or predicts) behaviour. The view that regulators act in the "public interest" is discussed and rejected in 3.4.1. An alternative explanation, that rule making is a process of "self interest" behaviour by politicians, regulators and other individuals is presented in 3.4.2.

3.4.1 Regulation as a "public interest" process

The "public interest" assumption of behaviour, is that regulators act to ensure efficient or equitable production and dissemination of corporate financial information.

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18 Official Record (1976, p.60).

19 An alternative approach would be to adopt a non-economic or "broad based" socio-political viewpoint [Merino and Neimark (1982); Tinker (1984)]. However, much of the event history of interim reporting regulation in New Zealand occurs within a relatively short period. Hence, the economic analysis presented is within a given socio-political environment. On the other hand, the external validity of the economic approach to regulation is tested by examining the regulation of a different issue (interim reporting) in a different socio-political environment (New Zealand).
Efficiency
A well defined and widely used measure of efficiency is the economists' concept of Pareto optimality. Under this concept, regulation is in the public interest if it improves at least one person's condition without making worse the condition of others. However, several Pareto optima can exist since a particular solution is dependent upon an initial assumption concerning the distribution of resources.

The history documented in Section 3.2 shows that the freezing industry perceived interim reporting to impose costs on firms with seasonal activities. In considering submissions to their proposals the SEANZ did not appear to discuss the impact of interim reporting in terms of any arguments about efficiency (Pareto optimal or otherwise). Nevertheless, regulation may still be justified on grounds of equity.

Equity
The "public interest" appeal for equity is not entirely independent from economic (allocative) efficiency. A typical argument is that public "confidence" in the market rests on the notion of "fairness", which includes "equal access to information." The public interest is served by reducing the advantage of insiders or large investors who have direct access to corporate information, resulting in a fairer and more competitive market.
The SEANZ stated the following reasons for regulating more timely interim (and preliminary) announcements:

Most companies keep shareholders informed of their position when announcing the interim dividend. Fairness requires shareholders of other companies be similarly advised.  

The address which Mr. McAllister delivers at each of the meetings emphasizes the function of the Stock Exchanges, and the consequent need for information so that investor confidence is not undermined, for that confidence supports the private enterprise system.

As the New Zealand market becomes more sophisticated and as more investors enter it, the need for better reporting increases. The association is concerned that listed companies should meet that need.

These stated objectives are clearly based on the grounds of "equal access", "fairness" and "confidence", rather than Pareto optimal considerations.

If the SEANZ was concerned with determining the optimal level of interim accounting disclosure, it would be expected to identify the affected parties and assess the cost/benefits of alternative arrangements. The fact that the SEANZ called for comments and held discussion meetings prior to the 1976 listing amendments is

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20 Auckland Stock Exchange remit to the 1946 Annual General Meeting of the SEANZ.

21 The address is that given by McAllister (the Secretary of the SEANZ) at the 1975 meetings to discuss the listing manual revisions [McLay (1982, p.95)].

22 McAllister (1972).
consistent with the SEANZ's concern for the costs and benefits of disclosure.

Nevertheless, whether the SEANZ acted on behalf of the public or the general body of investors can still be questioned. First, while the SEANZ called for comments and ran discussion meetings with company managers, it did not investigate the information needs of investors. Second, the SEANZ required interim reports to be sent to the exchange, not directly to shareholders.

An alternative explanation is that the regulation of interim reporting by the SEANZ is more readily interpreted as an act of self interest than one of public interest. This self interest explanation is pursued in the next section.

### 3.4.2 Regulation as a "self interest" process

The view that the SEANZ acted in self interest rather than in the public interest is consistent with recent developments of economic theory of regulation [Stigler (1971); Posner (1974); Zimmerman (1977); Watts (1980)]. The underlying behavioural assumption of "self interest" is that, in general, all economic agents are
rational, evaluative, and maximizing (REM). \(^{23}\)

Regulatory agencies are viewed as coalitions of interacting REM agents. Accounting policy decisions are viewed as the product of the rational choices of REM agents and coalitions. Before the motivational factors are discussed, the relationship between investors, financial analysts, stockbrokers and the SEANZ is outlined.

The SEANZ was an association of regional stock exchanges, indirectly controlled by stockbrokers (the members of the regional exchanges). Some insight into the relationship between investors and analysts can be gleaned from the results of a 1976 New Zealand survey by Chang and Most (1985) (presented in Table 3.3). Two important observations are made from Table 3.3. First, stockbrokers are the major supplier of financial analysis and investment advisory services, being the principal source of information for investors. \(^{24}\) A second observation is that interim reports are an important source of information for financial analysts.

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\(^{23}\) REM agents act in self interest with regard to the consequences of changes in the environment [Meckling (1976)].

\(^{24}\) Zeff (1979, pp.84-87) comments on the general weakness of the press and other institutional monitoring arrangements in New Zealand.
<table>
<thead>
<tr>
<th>Information Source</th>
<th>Individual investors</th>
<th>Institutional investors</th>
<th>Financial analysts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporate annual reports</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Newspaper and magazines</td>
<td>1</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>Advisory services</td>
<td>5</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>Stockbroker's advice</td>
<td>2</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Proxy statements</td>
<td>4</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Advice of friends</td>
<td>6</td>
<td>6</td>
<td>-</td>
</tr>
<tr>
<td>Tips and rumors</td>
<td>6</td>
<td>6</td>
<td>-</td>
</tr>
<tr>
<td>Prospectuses</td>
<td>-</td>
<td>-</td>
<td>5</td>
</tr>
<tr>
<td>Communications with management</td>
<td>-</td>
<td>-</td>
<td>3</td>
</tr>
<tr>
<td>Interim reports</td>
<td>-</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>Press releases</td>
<td>-</td>
<td>-</td>
<td>4</td>
</tr>
</tbody>
</table>

Survey of New Zealand investors and analysts in 1976: [Chang and Most (1985, p.39)].
It is contended that stockbrokers/financial analysts pressured the SEANZ into requiring more disclosure, because of (1) an increasing demand for information by investors, and (2) a need to maintain a competitive advantage in the supply of financial analysis and advisory services.

The increasing demand for information by investors arose from a substantial (threefold) increase in the amount of capital issued by firms during the period 1962-1974, which increased the number of individual (and institutional) shareholders. Fogelberg (1978, 1980) reports that, for a sample of 12 companies, total capital increased from $84 million to $260 million from 1962 to 1964, while the number of shareholders increased from 87,582 to 210,519. During the same period the capital held by insurance companies increased from $4.9 million to $34.3 million.

Franklin (1960, p.64) notes the increasing importance of small investors:

New Zealand is only on the threshold of group investment. Clubs for investors are still in their infancy and the unit trust movement cannot be launched until it receives official blessing. Only a minority of companies have taken the step of splitting their shares into 5 s. units to give small investors more opportunity.  

25 The First New Zealand Unit Trust was constituted in 1960.
The increase in number and importance of small investors from 1960 is likely to have increased the demand for financial analysis and investment advisory services. In supplying this demand, stockbrokers would not necessarily demand increased public disclosure of financial data. Analysts and brokers with a competitive advantage in information search would oppose timely (e.g. interim reporting) disclosures, because their potential returns from obtaining and using private information would be reduced [Hakansson (1977)]. Nevertheless, financial analysts/stockbrokers did in fact strongly criticize the leadership of the SEANZ for the soft line taken towards increasing financial disclosure [Robb (1972, p.56)].

Two factors are considered important in the decision by stockbrokers to demand more timely public disclosures. First, the regulation of more timely disclosure can be viewed as a way of reducing the competitive advantage of institutional investors, with the ability to appoint directors and therefore obtain internal access to information. The rapid growth of institutional investment over the period 1962-1974 is recorded by Fogelberg (1978, 1980).

Second, increasing competition was also coupled with a poor ability by New Zealand stockbrokers to supply the increasing demand for financial analysis services. The
lack of sophistication in financial research and advisory services was noted by Clinton (1971, p.30), who states that the New Zealand stockbroker provides:

a somewhat restricted service compared with that of his opposite number in the United States .....Some broking firms do maintain research departments for the benefit of clients and as an adjunct to activities in underwriting and capital raising for company expansion.

In reply to this self interest explanation, it might be argued that demand for "equal access" to information was made by stockbrokers/analysts on behalf of investors. However, the demands of security analysts cannot proxy for the demands of investors or stockholders. Stockholders (and investors), debtholders and customers bear the cost of the information in some unknown mix. Hence, investors would not want as much information as security analysts. The existence of free riders would result in the overproduction of interim information.

The argument presented in this section is that the regulation of more timely information reduced the cost and increased the quantity of security analysis. The benefits were received by stockbrokers at a cost to shareholders, debtholders and customers. Hence, the regulation of interim reporting is more readily interpretable as an act of self interest by analysts/stockbrokers.
3.5 Lobbying

The cost of lobbying and the formation of coalitions is central to the self interest political process of regulation. The REM lobbyist does not respond passively to policy, but creates new alternatives and alters the likelihood of a favoured proposal being adopted. The outcome of the political process (the nature of legislation and regulation) depends on the relative costs of various groups in coalescing and influencing legislation. In the regulation of interim reporting two lobbying actions were observable.\(^{26}\) This section describes these lobbying activities, then presents and discusses hypotheses of self interest lobbying behaviour.

3.5.1 Lobbying by the SEANZ

The SEANZ attempted to "capture" the political process and lobbied to have interim reporting a legal requirement. In 1965 the SEANZ conference decided to make submissions to the Companies Act Revision Committee. One suggestion was that half yearly reporting be mandatory except for companies exempt by schedule. Early in 1971 submissions were presented to the Macarthur Committee review. The SEANZ recommended that:

\(^{26}\)It is acknowledged that lobbying is often private and unobservable.
preliminary statements and interim reporting in an abridged form be positively authorised and encouraged.

The Macarthur Committee (1973, p.96) did little more than acknowledge the request of the SEANZ:

We agree with the Stock Exchange that time is of the essence in company reporting and that up-to-date information is far better public relations than expensively produced multi-coloured reports which appear when the next financial year is almost over. The Stock Exchange itself encourages preliminary announcements and will shortly demand, as a listing requirement, interim reports.

3.5.2 Lobbying by the Freezing Companies Association

In response to the proposed changes to the Listing Manual, published in the Official Record (May, July, August and November 1975), 21 submissions were received. One of the important submissions with regard to interim reporting was from the FCA, who requested that its members be exempted from the interim reporting requirements on the following grounds. First, the bulk of the purchasing and processing for the year is incurred during the first half year but only a small proportion of the annual sales are made. Therefore relatively small inaccuracies of inventory estimates

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27 Official Record (March 1971, p.77)

28 In addition to the FCA submission, 3 were received from sharebrokers, 3 from professional bodies, 3 from individuals and 11 from listed companies (including 3 freezing companies and 2 other companies in seasonal industries).
will cause significant variations in profit and reduce the reliability of the reported interim numbers. Second, New Zealand companies would be prejudiced, as several overseas companies in the freezing industry would not have to follow the SEANZ listing requirements. Third, the possible adverse reactions of the trade unions to the publicized figures.

In response to the criticisms of the half yearly reporting requirements, Mr McAllister (the Secretary of the SEANZ) announced that provision was being made for limited exemption, confined to the non-disclosure of actual figures. He also stated:

If the standard of interim reports is to be lifted, as I believe in our mutual interests it should be, these exemptions should be meagre and given only in fully proven cases. I may point out that overseas Stock Exchanges give no exemption to their detailed requirements for interim reports.

3.5.3 Discussion

Sutton (1984) draws on Downs (1957) to argue that lobbying will be concentrated on those whom economic consequences bear most heavily. Given the existence of

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a free-rider problem in lobbying activity, in the absence of cost sharing arrangements, lobbyists bear the full cost of lobbying but do not receive all the benefits. Hence, only those agents with much to gain or lose from the proposed rules will lobby.

In the case of accounting measurement issues it is generally those who bear the costs of information production who will lobby. In contrast, it is consumers who pay more attention to disclosure issues, generally favouring the provision of additional information.

Sutton (1984, p.91) provides a self interest rationale for the lobbying actions of the SEANZ. Since the SEANZ is a private body the penalties it can impose on those who flout its rulings are severely limited. Indeed, the early history of the SEANZ indicates that enforcement was a serious problem. Sutton suggests that in order to raise the cost of compliance, lobbyists (the SEANZ) will use "public interest" arguments and will appeal to higher authority (including government intervention).

In section 3.3 it was suggested that financial analysts were the main recipients of more timely interim disclosures; at the expense of investors, debtholders, and customers. Investors' interests are typically
under-represented when policies determine the extent and nature of corporate disclosure. Because of the costs of lobbying, the potential benefits, the probability of favourably altering the outcome, and the free-rider problem, investors generally have few incentives to organize opposition.

Stockbrokers (members of the SEANZ) were the main recipients of more timely financial disclosures. Hence the SEANZ had strong incentives to increase the costs of compliance and to develop the listing agreement as a continuing document. In addition, Section 3.3 suggests that the SEANZ used the Official Record as part of the political process of enforcing compliance. Raising the costs of non-compliance increases the level of producer lobbying [Sutton (1984)]. The FCA argued for an exemption from interim reporting on three main grounds: (1) the reliability of interim disclosures for seasonal businesses, (2) the costs of competitive disclosures, and (3) political costs.

Lobbying will be concentrated among those producers on whom the "real" effects of a standard are likely to bear most heavily (e.g., a general standard with differential impact across industries) [Sutton (1984, p.86)]. The FCA acted as a coalition to enforce cost-sharing arrangements thereby reducing the costs of lobbying. Sutton also hypothesizes that undiversified
producers are more likely to lobby than diversified producers. Firms affected by seasonal activities can be regarded as "undiversified" when the accounting problem (interim reporting) is a temporal issue and therefore the group most affected by interim reporting procedures.

3.6 Summary
This chapter examines the institutional factors surrounding the development of interim reporting. The historical perspective has viewed the regulation of interim reporting by the SEANZ as an act of self interest, rather than as an act in the public interest. While the reporting of interim earnings disclosures is not entirely independent of the regulatory framework, the evidence presented shows that firms were issuing a wide range of earnings disclosures prior to the interim reporting being strongly recommended in the 1962 listing agreement. On the other hand, some firms strongly resisted attempts by the SEANZ to regulate interim disclosures.
The history sketched in the previous chapter reveals that opposition to interim reporting requirements was not universal. Some firms voluntarily disclosed interim earnings prior to the inclusion of half yearly reporting (as a recommended practice) in the 1962 Listing Agreement. In addition, Table 2.2 demonstrates that firms vary greatly with respect to the level of information provided about interim earnings.

At present, a fully cohesive theory of corporate disclosure does not exist. A convenient starting point is the observation and description of the real world, noting associations between variables of interest. This chapter develops reasons (stated in the form of hypotheses) why some managers voluntarily supply interim earnings disclosures, while other managers might oppose (or lower) interim disclosures.

4.1 Agency costs
Agency theory is concerned with the principal-agent problem of a firm arising from the separation of ownership and control [Jensen and Meckling (1976)], between different suppliers of capital [Smith and
Warner (1979)] and in the separation of risk bearing, decision making and decision control functions in the firm [Fama and Jensen (1983)]. Agency costs arise from such a relationship because the agent (assumed to be REM) acts in self interest, which need not be consistent with the best interests of the principal. Since the manager-shareholder-bondholder conflicts of interest are assumed to be a negative sum game, voluntary contracting to control these conflicts of interest can improve the wealth of both agent and principal.

However, the manager still bears the full agency cost of equity where shareholders anticipate managers' wealth transfer activities and impound these expectations in the price they offer for the firm's shares. In a similar manner, rational debtholders recognise the divergent incentives of shareholders after debt has been issued and therefore price protect themselves (pay less for debt, or demand higher interest) to compensate for the possibility of subsequent wealth transfers to shareholders.

In an alternative view of agency theory, Fama (1980) treats management and riskbearing as separate factors of production within a firm. Riskbearers face capital markets for their services and, in an efficient capital market, are able to diversify their wealth across many
investments and hedge against the failure of a single firm. In contrast, managers facing the market for human capital have a substantial interest in the performance of the firm. Hence managers are subject to full ex post settling up, either through the disciplining mechanism of the managerial labour market or through mechanisms internal to the firm. Consequently, conflicts of interest are eliminated since managers bear the full cost of failing to maximize firm value.

Jensen and Meckling (1976) suggest that managers voluntarily produce financial statements for contracting and monitoring in order to reduce agency costs. Watts (1977) provides several hypotheses, within an agency framework, to explain both the existence and cross-sectional variation in the content of financial statements. LWZ (1981) examine the hypothesis that reporting frequency is positively related to the level of agency costs.

4.1.1 Manager-stockholder conflict
Agency costs associated with the manager-stockholder conflict are dependent on the level of outside (non-manager) capital. Jensen and Meckling (1976) and Watts (1977) suggest that the optimal level of monitoring increases as the owner/manager's proportional claim on the firm decreases. Where large
non-manager shareholdings exist (for example, institutional or inter-corporate investment), the agency costs arising from information asymmetry can be reduced by appointing directors and forming audit committees. External reporting is likely to be an effective monitoring device as the number of non-manager stockholders increases [Schipper (1981)].

The first hypothesis, stated in the alternative form, is:

**H1:** Firms with larger numbers of non-manager stockholders have higher levels of interim disclosure.

Myers (1977) suggests that wealth transfers are more difficult (hence agency costs are lower) when the value of the firm is represented by a higher proportion of assets in place (compared to growth opportunities). However, empirical evidence to support the association between assets in place and voluntary disclosure is weak [see LWZ (1981) and Chow and Wong-Boren (1987)].

The second hypothesis is:

**H2:** Firms with a lower proportion of assets in place have higher levels of interim disclosure.

4.1.2 Bondholder-stockholder conflict

Agency costs associated with the bondholder-stockholder conflict are dependent on the form of claims held by outsiders [Jensen and Meckling (1976)] and management’s
production/investment policies. Since the firm’s production/investment decisions and its dividend and financing decisions are linked via the firm’s cash flows, bondholders achieve a measure of indirect control by limiting the firm’s financing and dividend policies [Smith and Warner (1979)].

Financing restrictions, in the form of debt priorities and limitations on the total debt issued, are normally contracted in terms of accounting numbers from annual consolidated financial statements. Interim reports have few implications for such financing restrictions. Hence, the leverage hypothesis is not directly considered in this study.¹

The role of dividend covenants is to restrict, not dividends per se, but "investment financed" and "debt financed" distributions [Kalay (1982) and Smith and Warner (1979)]. Dividend covenants ensure an "inventory of funds" is maintained over the life of the bonds. In New Zealand, dividend-constraining covenants are not a typical feature of debt agreements.² Protection for the debtholder is provided, in part, by statute and case

¹However, the sensitivity of the results to leverage (as an omitted variable) is examined in Chapter Six.

²See Emanuel (1976).
law. While there are no specific regulations which limit dividends to profits, a basic principle of New Zealand corporate law is that dividends can only be paid out of profits, not capital [see Johnston, Edgar and Hays (1982, p. 160)]. In addition, most companies adopt standard Articles of Association which include the following:

The directors may from time to time pay to the members such interim dividends as appears to the directors to be justified by the profits of the company [Al15, Table A, Companies Act 1955].

To provide evidence that they have discharged their legal obligations with regard to the source (capital or income) of an interim dividend, directors would need to prepare interim income statements. However, it is possible to incur an interim loss and still pay an interim dividend out of unappropriated (past) profits. This would reduce the bondholders' "inventory of funds". Hence, the disclosure of interim earnings can reduce agency costs by informing bondholders that their "inventory of funds" has been maintained. The third hypothesis tested is:

**H3:** Firms with interim dividend payments have higher levels of interim disclosure.

---

3 The A.S. Paterson & Co. Ltd. interim announcement (reported in Section 3.3) is illustrative of the concern of the directors in paying an interim dividend when interim profits have fallen.
4.2 Political costs
Researchers use the existence of political costs to explain why some firms adopt an income reducing strategy in their accounting policy choice [for example, Watts and Zimmerman (1978), Hagerman and Zmijewski (1979), and Zmijewski and Hagerman (1981)]. However, the linkage between political costs and income disclosure is not as clear as its impact on income determination. One of the important political issues relating to corporate enterprises in the mid-1970's in New Zealand was company profits and price controls. This culminated in The Commerce Act 1975 with the objective of combating monopoly power and controlling inflation. Given this political scenario it might be argued that if political costs arise when firms report earnings, then firms subject to high political costs will reduce the level and frequency of earnings disclosures. Hence, the following proposition is hypothesized:

H4: Firms with low political costs have higher levels of interim disclosure.

4.3 Earnings volatility
The signalling literature assumes a market characterized by information asymmetry - where the seller of goods and services knows their quality but the buyer does not. If buyers cannot distinguish between products of different quality they price all
products by using the average quality. At that price, sellers of better than average quality products will refrain from trading and the market may collapse. Signalling is one technology that corrects such a market failure. Sellers signal their product quality to uninformed buyers in the form of a costly act to indicate the superiority of their product. The higher the cost of the signal the higher is the indicated quality. At equilibrium, appropriate pricing by buyers and sellers will prevail and sellers will select an act that will disclose the true quality of their product.

The signalling literature suggests that firms are motivated towards a policy of full disclosure [see, for example, Grossman and Hart (1980), Grossman (1981), and Milgrom (1981)]. If information is known to be withheld, buyers bid down the value of the firm to the point where the firm signals (either directly or through some other mechanism) the superior information that is held [Verrecchia (1983) and Dye (1985)].

While the "full disclosure" result of analytical research is not questioned, empirical research shows that managers do exercise discretion in the disclosure of accounting information. For example, several studies find "bad news" is generally associated with a delay in external reporting [see, for example, Givoly and Palmon
Recent analytical research examines the motivations for discretionary disclosures.

Verrecchia (1983) develops a model in which the manager exercises discretion over the release of a signal, based on the expected impact of the market price of the firm to the information disclosed. Information is assumed to remain private unless revealed by the manager. Hence, for the manager’s information to have a positive impact on firm value it must be disclosed voluntarily. The manager is able to exercise discretion over the threshold level of disclosure because, with the existence of proprietary information, traders are unable to interpret withheld information unambiguously as bad news. Verrecchia (1983) hypothesizes that the discretionary delay of information arises if the proprietary costs of disclosure dissipate as information becomes dated.

Where management compensation is tied to the end of period market value of the firm, managers will be

---

4 However, the evidence is not unanimous. Watts (1978), for example, finds no significant cross-sectional distribution of quarterly lags which would support the deliberate delay hypothesis.

5 Verrecchia (1983) describes proprietary costs as data useful to competitors, shareholders, and employees in a way which is harmful to a firm’s prospects.
indifferent to releasing interim disclosures to forecast annual earnings, given that actual earnings will eventually be released at a later date through mandated disclosures.\textsuperscript{6} Trueman (1986) suggests that the manager's motivation to disclose earnings forecasts comes, not from a desire to disclose news, but to provide a positive signal of his or her ability to monitor the environment and alter production plans.

Trueman's analysis specifically deals with interim earnings forecasts. While the costs and benefits of an (ex ante) earnings forecast and an (ex post) statement of interim earnings are likely to differ, interim reports are used for predicting the annual outcome and assume a similar function to earnings forecasts.\textsuperscript{7} New Zealand companies did not provide earnings forecasts in the pre-1976 period. In the context of this study interim reports could be used by management, as suggested by Trueman, to signal their ability to monitor their environment and alter production plans.

Hence, a benefit-related hypothesis is that the more

\textsuperscript{6}Interim reporting has little impact on management compensation packages that are contracted on annual income numbers. Hence, the incentive plan hypothesis tested by Healy (1985) and others is not examined in this study.

\textsuperscript{7}The role of the interim report to predict annual earnings is described by Green (1964), Hakansson (1977), and FASB (1978) and others.
uncertainty in predicting annual earnings the greater the benefits for management to voluntarily signal interim earnings.

A competing explanation is that earnings uncertainty (volatility) reduces the benefits of interim disclosure or increases the costs of interim income determination. Trueman ignores the credibility issue of signalling by assuming that ex post verification deters false disclosures [Hughes (1986)]. The existence of earnings variability (or subperiod volatility) might reduce the credibility of interim earnings as a signal, leading managers to lower their level of interim disclosures.

Empirical evidence tends to favour the cost-related explanation of earnings variability and voluntary disclosure. Cox (1985) and Waymire (1985) demonstrate that voluntary forecast disclosure is negatively related to earnings variability. Furthermore, the reasons given by executives for not disclosing earnings forecasts is the belief (whether justifiable or not) that forecast errors will magnify price volatility and lower price earnings ratios [Lees (1981)]. In particular, the seasonal nature of earnings (or subperiod volatility) is considered a major problem of interim reporting [Taylor (1963, pp. 131-178), Robb (1973, p.77)].
Hence, the fifth and sixth hypotheses are:

**H5:** The level of interim earnings disclosure is negatively related to the uncertainty of annual earnings.

**H6:** Firms less subject to seasonal fluctuations have higher levels of interim disclosure.

### 4.4 Information production costs

Firms will voluntarily disclose information to the extent that marginal benefits exceed marginal costs. Robb (1973, p.77) reports the following survey results, of the most difficult problem of interim reporting (experienced or anticipated) by New Zealand firms:

<table>
<thead>
<tr>
<th></th>
<th>Firms</th>
<th>Nonissuing Firms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Issuing Reports</td>
<td></td>
</tr>
<tr>
<td>Inventory</td>
<td>6 (35.5%)</td>
<td>19 (34.5%)</td>
</tr>
<tr>
<td>Seasonal business</td>
<td>5 (29.5%)</td>
<td>6 (10.0%)</td>
</tr>
<tr>
<td>Time and cost</td>
<td>3 (17.6%)</td>
<td>19 (34.5%)</td>
</tr>
<tr>
<td>Income measurement</td>
<td>3 (17.6%)</td>
<td>11 (20.0%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17 (100.0%)</strong></td>
<td><strong>55 (100.0%)</strong></td>
</tr>
</tbody>
</table>

Taylor (1963) also reports that one of the most commonly cited costs of interim reporting is the out-of-pocket cost of taking inventory. Hence:

**H7:** Firms with lower out-of-pocket costs (relating to inventory levels) have higher levels of interim disclosure.
Information production costs include a larger set of costs than the direct costs of preparing and disseminating interim disclosures.\(^8\) The disclosure of competitive information is regarded as a proprietary cost of interim disclosure [Taylor (1963, pp.131-78)].

Hence:

**H8:** Firms with low costs of competitive disclosures have higher levels of interim disclosure.

### 4.5 Summary

The preceding discussion has developed hypotheses pertaining to the level of voluntary earnings disclosures. The manner in which these hypotheses are tested is considered in the next chapter.

\(^8\)The problems of earnings volatility on interim income determination (discussed in Section 4.3) can also be regarded as an information production cost.
CHAPTER FIVE

RESEARCH DESIGN CONSIDERATIONS

The purpose of this study is to test whether variables (proxying for economic incentives) are associated with the firm's level of voluntary semiannual disclosure. Chapter Four developed eight hypotheses relating to the release of firms' semiannual interim earnings disclosures. This chapter considers the manner in which these hypotheses may be tested. This chapter also describes the selection of dependent and independent variables and the data collection procedures.

The experimental design in this study involves developing an index of disclosure for semiannual earnings as the dependent variable (discussed in 5.1) and selecting independent variables that represent the economic incentives for semiannual disclosure (discussed in 5.2). Section 5.3 discusses the univariate and multivariate tests to be employed in assessing the statistical significance of the independent variables at different levels of semiannual earnings disclosure. The main limitations of this design are discussed in 5.4.
5.1 Sample and dependent variable selection

All observations of semiannual announcements used in this study are identified by reference to the NZSE Official Record covering the period April 1, 1973 to June 30, 1976.¹

Each interim announcement during this period was reviewed and assigned a disclosure score.² The disclosure scoring scheme is based on evidence that "information content" of an earnings announcement is related to both sign and magnitude of unexpected earnings [see for example, Beaver, Clark and Wright (1979), Emanuel (1984), Hagerman, Zmijewski and Shah (1984)]. If a firm disclosed a point estimate of interim earnings the firm was assigned a disclosure score of 2; the disclosure of a percentage change or a sign change in earnings was assigned a score of 1; and

¹Prior to February 1973, semiannual releases were not systematically documented in the NZSE Official Record (or elsewhere). This limits the ability to examine voluntary interim disclosures released in earlier periods.

²Replicating LWZ (1981) for reporting frequency is not possible unless an assumption is made that the absence of an interim announcement in the NZSE Official Record indicates no interim report was released. Furthermore New Zealand firms do not issue quarterly reports.
if neither sign nor size of interim earnings was disclosed a score of 0 was assigned.  

From this initial review of the NZSE Official Record, two data sets were sampled to test the hypotheses developed in Chapter Four. The first data set examines the level of semiannual earnings disclosure using the index described above. Where more than one announcement for each firm was reported in the NZSE Official Record during the 1973-1976 period, only the first announcement was included in the sample. The second sample was selected from firms that make multiple announcements during the four year period and included firms that changed their level of semiannual earnings disclosure.

Table 5.1 analyses, by calendar year, the level of earnings disclosure (Panel A) and the number of firms that changed their level of semiannual earnings disclosure (Panel B). Selecting the sample of interim disclosures from the first announcements reported in

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3 A percentage change in semiannual earnings does not provide more information than a sign change in earnings unless the ratio of semiannual earnings to annual earnings is known [See Brown (1972, p.17)]. This would require disclosure of a point estimate of interim earnings in the previous year.

4 Retaining multiple announcements in the sample would violate the assumption of independent observations required by the statistical tests.
Table 5.1
Calendar distribution of semiannual announcements

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Disclosure score</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Point estimate</td>
<td>8</td>
<td>38</td>
<td>6</td>
<td>0</td>
<td>52</td>
<td>0.968</td>
</tr>
<tr>
<td>1 Percentage or sign change</td>
<td>22</td>
<td>41</td>
<td>10</td>
<td>5</td>
<td>78</td>
<td>(0.325)</td>
</tr>
<tr>
<td>0 Comment</td>
<td>6</td>
<td>15</td>
<td>4</td>
<td>3</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td></td>
<td>36</td>
<td>94</td>
<td>20</td>
<td>8</td>
<td>158</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Panel B: By changes in the level of earnings disclosure:</th>
<th>1974</th>
<th>1975</th>
<th>1976</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increases</td>
<td>8</td>
<td>14</td>
<td>6</td>
<td>28</td>
</tr>
<tr>
<td>No change</td>
<td>15</td>
<td>56</td>
<td>24</td>
<td>95</td>
</tr>
<tr>
<td>Decreases</td>
<td>7</td>
<td>17</td>
<td>1</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>30</td>
<td>87</td>
<td>31</td>
<td>148</td>
</tr>
</tbody>
</table>

a The $X^2$ statistic (significance level in parenthesis) compares the distribution of changes in disclosure levels between 1973/74 and 1975/76. A $X^2$ statistic is not estimated for the sample which examines changes in the level of earnings disclosure (Panel B) as observations are not independent.
the NZSE Official Record has clustered the observations in the earlier reporting periods. For example, the interim disclosures released in 1974 provide 59 percent of the disclosure level sample. The $X^2$ statistic in Table 5.1 indicates that the distributions of earnings disclosure levels between the periods 1973/74 and 1975/76 did not change significantly. Hence, the manager's motivations to make interim earnings disclosures was not affected by the impending mandatory disclosure in 1976, which was announced in 1975. This is also supported by the nearly equal numbers of firms increasing and decreasing their disclosure in the disclosure change sample.

An important limitation relating to the source of data is that the NZSE Official Record does not systematically record all semiannual announcements. It is possible to distinguish between the disclosure of and the publication of a semiannual report. The level of semiannual earnings disclosure is a management decision; whether to publish the semiannual earnings in the NZSE Official Record is an editorial decision based on factors such as company size, the degree of "surprise" and the shortage of "copy". Table 5.2 presents descriptive statistics of the market value of equity and the net tangible asset backing of the sampled firms and nonsampled firms. It appears that
**Table 5.2**
Descriptive statistics of sampled and nonsampled firms
(at December 1973)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Sampled firms</th>
<th>Nonsampled firms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Median</td>
<td>Median</td>
</tr>
<tr>
<td></td>
<td>Mean</td>
<td>Mean</td>
</tr>
<tr>
<td></td>
<td>Std.dev.</td>
<td>Std.dev.</td>
</tr>
<tr>
<td>Market value of equity</td>
<td>$000</td>
<td>$000</td>
</tr>
<tr>
<td></td>
<td>1,882</td>
<td>3,376</td>
</tr>
<tr>
<td></td>
<td>5,618</td>
<td>11,766</td>
</tr>
<tr>
<td></td>
<td>10,902</td>
<td>23,506</td>
</tr>
<tr>
<td>Net tangible asset backing</td>
<td>1,823</td>
<td>2,620</td>
</tr>
<tr>
<td></td>
<td>4,268</td>
<td>7,872</td>
</tr>
<tr>
<td></td>
<td>7,392</td>
<td>14,242</td>
</tr>
</tbody>
</table>

*a* The sampled firms are the 158 observations of semiannual announcements reported in the NZSE Official Record. The nonsampled firms are 93 nonmining New Zealand firms listed on the NZSE, who did not have semiannual announcements reported in the NZSE Official Record.

*b* The test statistic is a Mann-Whitney U test Z statistic (the two-tailed significance level is reported in parenthesis).
firms not reported in the NZSE Official Record as having made semiannual announcements are significantly larger than the firms sampled. One possible explanation is that there existed an editorial policy not to report those firms which released semiannual reports direct to shareholders rather than the SEANZ. The publication bias of the sampled firms suggests that an analysis of the sensitivity of the empirical results to firm size is appropriate.

5.2 Selection of independent variables
The following empirical variables were calculated to proxy for the economic consequences of interim disclosure:

Hypothesis 1: outside capital (OC)
Due to the high costs of obtaining data on the number of nonmanager stockholders, the number of ordinary shares issued is used as a surrogate measure. Another possible proxy for OC is "size" [see Jensen and

5Financial variables were recorded by hand, either from the Francis, Allison, Symes & Co Company Reviews (a corporate financial review service) or from the annual report of each firm, for the fiscal year following the interim disclosure. It is preferable to measure these variables at the interim reporting date, particularly for variables such as out of pocket costs. However such data is not available. Accordingly there is an assumption that the ranking of firms by these variables is the same for both interim and final reporting dates.
Meckling (1976) and LWZ (1981). Additional tests on a reduced sample show the number of ordinary shares issued is more correlated with outside capital and is therefore preferred as the empirical proxy for OC.\(^6\) However, the results are not sensitive if size is used as the proxy for OC.\(^7\)

Hypothesis 2: assets in place (AIP)

This is measured by the ratio of noncurrent assets to firm value. Noncurrent assets are measured at book amount (net of depreciation). A similar measure is employed by Leftwich, Watts and Zimmerman (1981).

Hypothesis 3: interim dividend (DIV)

A binary variable is used to represent the payment of an interim dividend. \(\text{DIV} = 1\) if an interim dividend is paid and \(\text{DIV} = 0\) otherwise.

\(^6\)Fogelberg (1980) examines the ownership and control of 43 companies during 1974. His study provides details from which to estimate the number of outside stockholders for 33 of the firms sampled in this study. Correlations between this more precise measure and issued stock (and size) is 0.96 (and 0.74). Both correlations are significant at the 0.01 level.

\(^7\)Size was measured by firm value and calculated as the sum of the market value of ordinary and preference shares and the book value of long term debt and current liabilities.
Hypothesis 4: political costs (PC)
Chapter Four suggests that political costs are more likely to be relevant for accounting policy choices that affect the measurement of earnings. The main political concern over corporate affairs during the period under review resulted in the Commerce Act 1975, which was introduced with the objective of combatting monopoly power and controlling inflation.

The Commerce Act 1975 schedules a "positive list of controlled goods and services". Direct approval by the Department of Trade and Industry was needed before prices could be increased in any of the Category A goods and services on the "positive list". Firms dealing in Category A goods and services were more likely to be under political scrutiny in 1974. A binary variable is used to capture this political scenario, where $PC = 1$ if the firm dealt with Category A goods and services, and 0 otherwise.\(^8\)

Hypothesis 5: earnings forecast error (EFE)
Competing arguments contend that both the benefits and the costs of voluntary interim disclosure increase if

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\(^8\)In 1977 the range of Category A goods and services was increased. Using the 1977 revised listing to measure political costs did not affect the results.
annual earnings are "hard to predict". However, empirical evidence by Cox (1985) and Waymire (1985) indicates a negative relation between voluntary disclosure and earnings volatility. An ex post annual earnings forecast error is calculated, where the prediction comes from a random walk model. To control for the underlying variability of the change in EPS series, the forecast error is divided by the standard deviation (calculated over 5 years) of changes in EPS:

\[
EFE = \frac{|(\text{EPS}_{i,t} - \text{EPS}_{i,t-1})/\sigma_i(\Delta \text{EPS})|}{\sigma_i(\Delta \text{EPS})}
\]

**Hypothesis 6: seasonal volatility (SVOL)**

Subperiod volatility makes interim income determination difficult (or costly) and is perceived by managers to reduce usefulness of interim earnings as a reliable signal for predicting annual earnings. Subperiod volatility is therefore expected to have an important influence on the decision to disclose interim earnings.

The seasonal nature of a firm’s activities is difficult to measure, due to the absence of sales disclosures.

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9 The use of analysts' forecasts to estimate the forecast error [see Waymire (1985) and Pincus 1983)] could not be used because such data was not published during the period of this study. Evidence by Caird and Emanuel (1981) and Firth (1982) indicates that the time-series of annual earnings of New Zealand firms is well specified by a random walk.
during the period of this study.\textsuperscript{10} Hence seasonality is measured at an industry level. Seasonality is related to both industry membership and the firm’s balance date. Using quarterly government statistics $SVOL$ is calculated:\textsuperscript{11}

$$SVOL = \left| \frac{Y_s}{Y_a} - 0.5 \right|,$$

where:

$Y_s =$ the first six months’ industry output,\textsuperscript{12}

$Y_a =$ annual output.

To ensure the results are not dominated by a single year’s seasonal volatility, a second measure was used averaging $SVOL$ over a five year period, with little change in the results.

\begin{itemize}
\item \textsuperscript{10}The requirement to disclose sales was introduced with SSAP-9 \textit{Information to be Disclosed in Company Balance Sheets and Profit and Loss Accounts}, which became effective March 31, 1979.
\item \textsuperscript{11}The New Zealand Government \textit{Abstract of Statistics} reports quarterly output figures for several industrial groupings. Eleven of these groupings correspond closely to the NZSIC industry classifications reported in Table 6.1.
\item \textsuperscript{12}Six monthly estimates are used, rather than quarterly, because the frequency of interim reporting being studied is semiannual. Hence, seasonal activity within the semiannual period is not relevant.
\end{itemize}
Hypothesis 7: out of pocket costs (OPC)

Robb (1973) suggests that a specific problem of interim income determination experienced (or anticipated) by New Zealand firms relates to the out of pocket costs of taking inventory. OPC is therefore measured by the ratio of inventory to total assets.

Hypothesis 8: concentration ratio (CR)

The costs of competitive accounting disclosures include the provision of information for entry decisions by potential competitors and for short-run decisions of primary interest to existing competitors. As the number of participants in a market increases, the market moves closer to a competitive system and the share of an industry supplied by a representative firm decreases. Where large numbers exist in an industry it is likely that producers ignore the effect of rival actions on their pricing and output decisions. Hence the cost of disclosing competitive information is likely to be higher for firms in concentrated industries. To measure market competitiveness a four-firm concentration ratio is used. The cost of competitive disclosure is

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13 The concentration ratio is measured by the percentage market share (based on sales value) of the four leading business units. The results of the study are not affected when a Herfindahl index is used to measure market competition. The Herfindahl index is measured by each business unit’s sales to total market sales ratio, which is then squared and summed. The result is a single index of 1 or less.
expected to be negatively associated with the industry concentration ratio.

Unfortunately the Department of Statistics (1976) reports concentration ratios for manufacturing firms only. In addition, the lack of industry statistics means that the variable SVOL could not be measured for all firms in the sample. Tests of the hypothesis are therefore undertaken on two subsamples: (1) the total sample which includes all observations but excludes variables SVOL and CR; (2) the reduced sample which includes only those firms for which all variables (including SVOL and CR) could be measured. The various samples employed in this thesis are summarised in Figure 5.1.

5.3 Research design
5.3.1 Univariate tests
In this thesis, both parametric and nonparametric univariate tests are conducted. Parametric tests (e.g., the student's t-test) assume stringent requirements on the data (e.g., the observations are drawn from a normal distribution and have equal variance). Many of the variables in this study do not satisfy these requirements and hence the t-test is not reported. Reliance is based on two nonparametric tests: (1) the Kruskal-Wallis one way analysis of variance by ranks, and (2) the Mann-Whitney U test.
Figure 5.1
Summary of samples employed in this study

All semiannual earnings announcements recorded in the NZSE Official Record during the period March 1973 to June 1976 (refer Table 3.2).
(n = 403)

Level sample
The first reported announcement for each firm.
(refer Table 5.2)
(n = 158)

Change sample
Subsequent announcements for each firm.
(refer Table 5.2)
(n = 148)

Total sample
All observations excluding variables SVOL and CR.
(n = 158)

Reduced sample
Only firms with complete data for all variables.
(n = 60)
The Kruskal-Wallis test is useful for deciding whether k independent samples are from different populations. It is a more efficient test than an extension of the median test because it utilizes more information in the observations, by converting scores into ranks rather than dichotomizing them into above or below the median. Compared to the parametric F test, under conditions where the F test assumptions are met, the Kruskal-Wallis statistic has asymptotic efficiency of 95.5 percent [Siegel (1956, p. 193)].

The Mann-Whitney U test compares two groups with respect to their rank and assumes that distributions are continuous [Gibbons (1976, p.192)]. Even if the data is normally distributed, the use of the nonparametric Mann-Whitney U test results in only a five percent loss in power [Siegel (1956, p.126)]. Hence, the Mann-Whitney U test is a powerful alternative to the t-test.

An advantage of univariate tests is that they prevent measurement errors in one independent variable affecting the results of others. However, if the

\[14\text{ The Mann-Whitney U test can also be used to compare two groups with respect to their variability. This test requires the distributions of each group to be symmetric about their respective median [Gibbons (1976, pp.218-220)].} \]
independent variables are correlated then the collective significance of the reported univariate tests may be overstated. Hence, the correlation between variables will be reported in order to assess the overall significance of the univariate results and to identify the potential problem of multicollinearity. Multivariate analysis will be employed to simultaneously test the hypotheses stated in Chapter Four.

5.3.2 Multivariate analysis
Multivariate analysis allows for the interaction among explanatory variables. The main multivariate statistical technique used in this study is N-chotomous logit.\(^{15}\) It is particularly suitable for this study where the explanatory variables are not normal (e.g., OC and EFE; see Table 6.2) and the dependent variable (i.e., the disclosure index measuring several levels of earnings disclosure) is ordinal.\(^{16}\)

---

\(^{15}\)Ordinary least squares and multiple discriminant analysis are not considered, as both methods assume the dependent variable is measured on an interval scale. In addition, logit has far fewer assumptions than the linear discriminant model (for example, no multivariate normality assumptions of the explanatory variables). Hence, logistic regression is often preferred over discriminant analysis [Lo (1986) and Press and Wilson (1978)].

\(^{16}\)Another possible multivariate alternative, used by Leftwich, Watts and Zimmerman (1981), is probit analysis. The differences between the probit and logit (Footnote Continued)
The multinomial logit model can be formally described:

\[ Y_i = X_iB \quad (1) \]

and:

\[ X_iB = X_{i1}B_1 + X_{i2}B_2 + \ldots + X_{ip}B_p \]

where

- \( Y_i \) denotes an ordinal dependent variable for the \( i \)th observation.
- \( X_i \) is the vector of independent variables for the \( i \)th observation.
- \( B = (B_1, \ldots, B_p) \) is the vector of regression parameters.

Logit analysis is a maximum likelihood estimating procedure which applies a logarithmic transformation to the dependent variable. In Chapter Six, for example, observations (firm's semiannual earnings announcements) are classified into several unequal width partitions (based on the disclosure score described in Section 5.1) on the basic assumption that the probability of \( Y_i \geq j \) is:

\[ \frac{1}{1 + \exp(-\alpha_jX_iB)} \]

(Footnote Continued)

models are described by Amemiya (1981) and Altman, Avery, Eisenbeis and Sinkey (1981). The main difference is an assumption concerning the shape of the density function for the distribution of the dependent variable. Probit employs a normal density function and logit a logistic density function. In most practical applications the two models are very similar.
where: \( j = 1, 2, \ldots, n \) and the range of the dependent variable is \( 0, 1, 2, \ldots, n \).

The linear function to be used to classify firms (in Chapter Six) has the following form:

\[
Y = a_j + B_1X_1 + B_2X_2 + B_3X_3 + B_4X_4 \\
+ B_5X_5 + B_6X_6 + B_7X_7 + B_8X_8 \tag{2}
\]

Where \( Y \) is the firm’s semiannual earnings disclosure score:

- \( 2 \) = a point estimate,
- \( 1 \) = either a percentage or sign change estimate,
- \( 0 \) = otherwise.

\( X_p \) are the variables described in Section 5.2.

For a more detailed discussion of logit see Altman, Avery, Eisenbeis and Sinkey (1981). Chow (1982) and Ayres (1986) are examples of a similar research design using logit regression.

5.4 Research design limitations
Cook and Campbell (1979, p.83) note that it is "unrealistic to expect that a single piece of research will effectively answer all the validity questions surrounding even the simplest causal relationship". In many instances the researcher imposes priorities on validity, because research designs will often improve
one type of validity at the expense of others. The ex post nature of this study is strong in external validity but causes one of the main problems for internal validity: it does not allow for random allocation of observations to experimental groups. Members of the sample have "self-selected" on the basis of the dependent variable (the level of semiannual earnings disclosure), which potentially introduces a systematic bias into the analysis. Characteristics related to this self-selection and omitted from explicit consideration provide a potential explanation for any observed differences in the behaviour of the sample and control groups.

The omitted variables problem cannot be totally overcome. Researchers must rely on existing theory and prior research to suggest the variables likely to be omitted. Several analyses are employed in this thesis to mitigate the omitted variables problem. Chapter Six considers the sensitivity of the results to a number of alternative explanations and variables (size, industry and leverage). In Chapter Seven a time-series design is employed, which allows each firm to serve as its own control.

17Cook and Campbell (1979) classify four types of validity: statistical, internal, external and construct.
5.5 Summary

This chapter has discussed research design considerations. Two samples are employed to test the hypotheses developed in Chapter Four. The results for the first sample, which examines the level of semiannual earnings disclosure, are presented in Chapter Five. The results for the second sample, which examines changes in the levels of semiannual earnings disclosure, are presented in Chapter Seven.
CHAPTER SIX

RESULTS: LEVELS OF DISCLOSURE

This chapter presents the results of univariate and multivariate tests on the level of voluntary semiannual earnings disclosures.

6.1 Descriptive statistics and univariate tests

Table 6.1 analyses the level of semiannual earnings disclosure by industry. There is a reasonable distribution of observations across industries, with no single industry providing more than 20 percent of the sample. There is some evidence of an industry effect on the level of disclosure. For example, the financial sector has a high level of semiannual earnings disclosure, while the apparel, motor vehicle and retail industries have a lower disclosure level.\(^1\)

Table 6.2 presents summary statistics of the independent variables analysed by level of disclosure. The explanatory variables are generally in the hypothesized direction, although the relation between the independent variables and the level of semiannual

\(^1\)Further consideration of an industry effect is deferred until Section 6.3.3.
### Table 6.1
Industry membership of sample firms

<table>
<thead>
<tr>
<th>3 digit NZSIC code</th>
<th>Industry</th>
<th>Disclosure score&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>311</td>
<td>Food products</td>
<td>2</td>
</tr>
<tr>
<td>313</td>
<td>Beverages</td>
<td>0</td>
</tr>
<tr>
<td>321</td>
<td>Apparels and fabrics</td>
<td>3</td>
</tr>
<tr>
<td>324</td>
<td>Footwear</td>
<td>1</td>
</tr>
<tr>
<td>331</td>
<td>Plywood, veneer and board</td>
<td>0</td>
</tr>
<tr>
<td>341</td>
<td>Pulp, paper and boxes</td>
<td>0</td>
</tr>
<tr>
<td>342</td>
<td>Printing and publishing</td>
<td>0</td>
</tr>
<tr>
<td>351</td>
<td>Industrial chemicals</td>
<td>0</td>
</tr>
<tr>
<td>352</td>
<td>Drugs, medicines, and chemicals</td>
<td>1</td>
</tr>
<tr>
<td>353</td>
<td>Gas</td>
<td>0</td>
</tr>
<tr>
<td>355</td>
<td>Tyres and tubes</td>
<td>0</td>
</tr>
<tr>
<td>361</td>
<td>Pottery, china and earthenware</td>
<td>1</td>
</tr>
<tr>
<td>362</td>
<td>Cement works</td>
<td>0</td>
</tr>
<tr>
<td>369</td>
<td>Concrete products</td>
<td>0</td>
</tr>
<tr>
<td>381</td>
<td>Building, construction, fabricating</td>
<td>8</td>
</tr>
<tr>
<td>383</td>
<td>Household durables</td>
<td>2</td>
</tr>
<tr>
<td>384</td>
<td>Motor vehicles</td>
<td>1</td>
</tr>
<tr>
<td>390</td>
<td>Brushes and brooms</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total manufactur</strong></td>
<td></td>
<td>19</td>
</tr>
<tr>
<td><strong>ing firms</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>b</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>b</strong></td>
<td>Wholesale trade</td>
<td>2</td>
</tr>
<tr>
<td><strong>b</strong></td>
<td>Retail trade</td>
<td>1</td>
</tr>
<tr>
<td><strong>b</strong></td>
<td>Stock and station agents</td>
<td>1</td>
</tr>
<tr>
<td><strong>b</strong></td>
<td>Transport</td>
<td>3</td>
</tr>
<tr>
<td><strong>b</strong></td>
<td>Property investment</td>
<td>1</td>
</tr>
<tr>
<td><strong>b</strong></td>
<td>Financial</td>
<td>1</td>
</tr>
<tr>
<td><strong>b</strong></td>
<td>Insurance</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total sample</strong></td>
<td></td>
<td>28</td>
</tr>
</tbody>
</table>

<sup>a</sup>Disclosure scores are defined in Section 5.1.

<sup>b</sup>NZSIC codes are not available for non-manufacturing firms.
Table 6.2  
Descriptive statistics of the independent variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Hypotheses</th>
<th>Disclosure score</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>(n=28)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>OC</td>
<td>H1:0&lt;2</td>
<td>Median</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mean</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Std.dev</td>
</tr>
<tr>
<td>AIP</td>
<td>H2:0&gt;2</td>
<td>Median</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mean</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Std.dev</td>
</tr>
<tr>
<td>DIV</td>
<td>H3:0&lt;2</td>
<td>Mean</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Std.dev</td>
</tr>
<tr>
<td>PC</td>
<td>H4:0&gt;2</td>
<td>Mean</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Std.dev</td>
</tr>
<tr>
<td>EFE</td>
<td>H5:0&gt;2</td>
<td>Median</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mean</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Std.dev</td>
</tr>
<tr>
<td>SVOL</td>
<td>H6:0&gt;2</td>
<td>Median</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mean</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Std.dev</td>
</tr>
<tr>
<td>OPC</td>
<td>H7:0&gt;2</td>
<td>Median</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mean</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Std.dev</td>
</tr>
<tr>
<td>CR</td>
<td>H8:0&gt;2</td>
<td>Median</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mean</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Std.dev</td>
</tr>
</tbody>
</table>

*a The disclosure score is defined in Section 5.1. Medians are not reported for the binary variables DIV and PC.

*b Independent variables are described in Section 5.2.
earnings disclosure is not monotonic. The three point disclosure score employed in this study implies two "threshold" levels of interim disclosure. At a basic level there is the decision of whether to provide a semiannual earnings announcement with "news". At a secondary level the manager’s decision is whether to release a point estimate of semiannual earnings or disclose a sign or a percentage change.

Two nonparametric univariate tests were conducted. The Kruskal-Wallis one way analysis of variance by ranks was used to test the hypothesis that the three samples (partitioned by disclosure score) came from the same population. A Mann-Whitney U test was conducted to test for differences in explanatory variables between the threshold levels of disclosure. Subsamples of the data were partitioned on the basis of disclosure scores to make the following comparisons: disclosure scores of 1 and 2 combined and 0; and between 1 and 2. The

---

2Verrecchia (1983) refers to a threshold level of disclosure as the degree of information quality below which the manager withholds information.

3Where "news" is defined as the disclosure of at least the sign change in semiannual earnings. The "no news" category (disclosure scores of 0) includes announcements such as "interim earnings are satisfactory" and "interim results are in line with budget".
univariate results are presented in Table 6.3. Variables OC, DIV, PC, EFE and OPC are significantly different (at the 0.10 level) across all threshold levels of disclosure. Variables DIV and CR are significant at the basic threshold disclosure level only, while PC and EFE are significant at the secondary threshold level only.

Rank correlation coefficients of the explanatory variables are presented in Table 6.4. The strongest bivariate correlation is -0.424 between AIP and OPC. Several other variables exhibit statistically significant correlation at the 0.05 level. As suggested by Johnston (1972) and applied by Daley and Vigeland (1983), the coefficient of multiple correlation $R^2$ between each variable and all other variables is also reported in Table 6.4. The larger multiple correlations are for AIP and OPC. The degree of intercorrelation among the variables suggests caution is necessary in interpreting the univariate tests and that a multivariate approach is appropriate to simultaneously test the stated hypotheses.

---

4A Mann-Whitney U test was also conducted to test for differences between percentage change and sign change disclosures. No significant differences were found at the 0.10 level. This supports the use of only three disclosure categories employed in this study.
### Table 6.3
Univariate tests of the independent variables a

<table>
<thead>
<tr>
<th>Variable c</th>
<th>Kruskal-Wallis test</th>
<th>Mann-Whitney U test b</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Disclosure score comparisons</td>
<td>0 v 1,2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H1:OC 16.68 (0.000)</td>
<td>-3.8522 (0.0001)</td>
<td>1.5160 (0.0647)</td>
</tr>
<tr>
<td>H2:AI0 0.30 (0.430)</td>
<td>0.4986 (0.3090)</td>
<td>0.2400 (0.4051)</td>
</tr>
<tr>
<td>H3:DIV 6.36 (0.020)</td>
<td>-2.4767 (0.0066)</td>
<td>-0.5734 (0.2832)</td>
</tr>
<tr>
<td>H4:PC 3.85 (0.073)</td>
<td>0.2377 (0.4060)</td>
<td>1.9668 (0.0246)</td>
</tr>
<tr>
<td>H5:EFE 4.25 (0.059)</td>
<td>0.2163 (0.4144)</td>
<td>-2.1029 (0.0176)</td>
</tr>
<tr>
<td>H6:SV0L 0.30 (0.430)</td>
<td>0.5416 (0.2923)</td>
<td>-0.0049 (0.4980)</td>
</tr>
<tr>
<td>H7:OPC 6.81 (0.016)</td>
<td>2.0787 (0.0188)</td>
<td>-1.5849 (0.0565)</td>
</tr>
<tr>
<td>H8:CR 3.19 (0.102)</td>
<td>-1.4013 (0.0821)</td>
<td>-1.1266 (0.1299)</td>
</tr>
</tbody>
</table>

**a** The reported statistics are the Kruskal-Wallis test $X^2$ approximation (one-tailed significance level in parenthesis) and the Mann-Whitney U test Z statistic (one-tailed significance level in parenthesis).

**b** The comparison groups for the Mann-Whitney U test are partitioned on the basis of the disclosure score (as defined in Section 5.1).

**c** Independent variables are described in Section 5.2.
Table 6.4
Correlations among the independent variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>logOC</th>
<th>AIP</th>
<th>logEFE</th>
<th>SVOL</th>
<th>OPC</th>
<th>CR</th>
</tr>
</thead>
<tbody>
<tr>
<td>logOC</td>
<td>1.000</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>AIP</td>
<td>0.136</td>
<td>1.000</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>logEFE</td>
<td>0.024</td>
<td>-0.157</td>
<td>1.000</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>SVOL</td>
<td>0.237</td>
<td>-0.138</td>
<td>0.070</td>
<td>1.000</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>OPC</td>
<td>-0.270</td>
<td>-0.424</td>
<td>0.045</td>
<td>-0.066</td>
<td>1.000</td>
<td>-</td>
</tr>
<tr>
<td>CR</td>
<td>0.310</td>
<td>0.223</td>
<td>-0.043</td>
<td>0.221</td>
<td>-0.213</td>
<td>1.000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variables</th>
<th>logOC</th>
<th>AIP</th>
<th>logEFE</th>
<th>SVOL</th>
<th>OPC</th>
<th>CR</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIV</td>
<td>2.815</td>
<td>-0.336</td>
<td>1.899</td>
<td>1.997</td>
<td>0.355</td>
<td>2.420</td>
</tr>
<tr>
<td>PC</td>
<td>0.223</td>
<td>3.513</td>
<td>-0.748</td>
<td>-1.263</td>
<td>-2.967</td>
<td>1.038</td>
</tr>
</tbody>
</table>

**Multiple R^2**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Total sample</th>
<th>Reduced sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>logOC</td>
<td>0.061</td>
<td>0.071</td>
</tr>
<tr>
<td>AIP</td>
<td>0.152</td>
<td>0.333</td>
</tr>
<tr>
<td>logEFE</td>
<td>0.008</td>
<td>0.020</td>
</tr>
<tr>
<td>SVOL</td>
<td>0.213</td>
<td>0.371</td>
</tr>
<tr>
<td>OPC</td>
<td>-</td>
<td>0.058</td>
</tr>
<tr>
<td>CR</td>
<td>-</td>
<td>0.077</td>
</tr>
</tbody>
</table>

**Binary variables**

<table>
<thead>
<tr>
<th>Variables</th>
<th>DIV</th>
<th>PC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.815</td>
<td>0.223</td>
</tr>
<tr>
<td></td>
<td>-0.336</td>
<td>3.513</td>
</tr>
<tr>
<td>SVOL</td>
<td>1.899</td>
<td>-0.748</td>
</tr>
<tr>
<td>OPC</td>
<td>1.997</td>
<td>-1.263</td>
</tr>
<tr>
<td>CR</td>
<td>0.355</td>
<td>-2.967</td>
</tr>
<tr>
<td></td>
<td>2.420</td>
<td>1.038</td>
</tr>
<tr>
<td></td>
<td>-0.213</td>
<td>0.072</td>
</tr>
<tr>
<td></td>
<td>1.000</td>
<td>0.151</td>
</tr>
</tbody>
</table>

**Notes:**

- Variables are defined in Section 5.2. Log transformations of the OC and EFE were undertaken to satisfy the normality conditions required for estimating the multiple R^2.
- Spearman rank correlations are presented because the differences between the means and medians for most of the variables rule out the assumption of data normality (see Table 6.2).
- The multiple R^2 is obtained by regressing each variable against other explanatory variables. The total sample includes all observations but excludes the variables CR and SVOL from the regression (n=158). The reduced sample includes in the regression only those firms for which SVOL and CR variables are available (n=60).
- For binary variables DIV and PC, two-tailed t-tests are reported for the difference in means between the 0 and 1 categories for each variable.
- Significant at the 0.05 level.
- Significant at the 0.01 level.
6.2 Multivariate analysis

The results of the logistic analysis are reported in Table 6.5. Model 1 reports results for the reduced sample of firms with complete data. Recall that the variables CR and SVOL are not available for all firms in the sample. Model 2 re-estimates model 1 with the variables CR and SVOL excluded. Model 3 uses the same variables as model 2 but is estimated on the total sample.

The model chi-square statistics in Table 6.5 are significant at the 0.10 level or lower. The likelihood ratio and Somers' $D_{xy}$ indicate the explanatory power of the models is low.

The coefficients of the explanatory variables in Table 6.5 are in the hypothesized direction with the exception of AIP (model 2), OPC (model 1 and 2) and CR (model 1). The significance (at the 0.10 level) of OC and DIV provides general support for hypotheses H1 (outside capital) and H3 (payment of an interim dividend), while H2 (assets in place) is significant only in model 3. The relation between semiannual earnings disclosure and hypotheses H2 (unexpected earnings) and H6 (the seasonal nature of the firm) is negative and significant. Hypothesis H7 (out of pocket costs) is significant in model 3. The reduced significance for OPC in model 1 is likely to be due to
Table 6.5
Multinomial logit models of semiannual earnings disclosures

<table>
<thead>
<tr>
<th>Hypothesis and Variables</th>
<th>Expected Sign</th>
<th>Reduced sample (N=60)</th>
<th>Complete sample (N=158)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Model 1</td>
<td>Model 2</td>
</tr>
<tr>
<td>H1: OC</td>
<td>+</td>
<td>0.1214</td>
<td>0.1016</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(3.86) h</td>
<td>(3.19) h</td>
</tr>
<tr>
<td>H2: AIP</td>
<td>-</td>
<td>-0.1117</td>
<td>0.3544</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.00)</td>
<td>(0.05)</td>
</tr>
<tr>
<td>H3: DIV</td>
<td>+</td>
<td>0.8979</td>
<td>0.6338</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(1.87) g</td>
<td>(1.03)</td>
</tr>
<tr>
<td>H4: PC</td>
<td>-</td>
<td>-0.5259</td>
<td>0.3749</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.28)</td>
<td>(0.16)</td>
</tr>
<tr>
<td>H5: EFE</td>
<td>-</td>
<td>-0.2869</td>
<td>-0.2335</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(4.32) h</td>
<td>(3.13) h</td>
</tr>
<tr>
<td>H6: SVOL</td>
<td>-</td>
<td>-58.1898</td>
<td>0.0000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(4.21) h</td>
<td>(0.00)</td>
</tr>
<tr>
<td>H7: OPC</td>
<td>-</td>
<td>0.3317</td>
<td>0.4149</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.02)</td>
<td>(0.03)</td>
</tr>
<tr>
<td>H8: CR</td>
<td>-</td>
<td>0.9514</td>
<td>0.3514</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.71)</td>
<td>(0.71)</td>
</tr>
<tr>
<td>Constants</td>
<td></td>
<td>0.4713</td>
<td>0.3781</td>
</tr>
<tr>
<td>a_1</td>
<td></td>
<td>(0.05)</td>
<td>(0.04)</td>
</tr>
<tr>
<td>a_2</td>
<td></td>
<td>-1.8546</td>
<td>-1.8176</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.77)</td>
<td>(0.82)</td>
</tr>
<tr>
<td>Model chi-square d</td>
<td></td>
<td>15.71</td>
<td>11.20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(8 d.f)</td>
<td>(6 d.f)</td>
</tr>
<tr>
<td>Likelihood ratio e</td>
<td></td>
<td>0.086</td>
<td>0.091</td>
</tr>
<tr>
<td>Somers' D_x  f</td>
<td></td>
<td>0.463</td>
<td>0.398</td>
</tr>
</tbody>
</table>

a The dependent variable is a 3 point scale of disclosure (defined in Section 5.1).
b Logit calculates MLE’s for the parameters associated with each independent variable. The MLE chi-square, to test the hypothesis that a particular parameter is zero, is shown in parenthesis below the estimated coefficient.
c The independent variables are defined in Section 5.2.
d The model chi-square is computed to test the hypothesis that all parameters in the model are simultaneously equal to zero. The statistic has an asymptotic distribution which is chi-square with degrees of freedom equaling the number of parameters in the model. The significance level is reported in parenthesis.
e The log likelihood ratio is defined as (1 - log likelihood at convergence/log likelihood at zero). It can be interpreted in a manner similar to the R^2 statistic in multiple regression. However large values are much less likely to occur than large values of R^2. Values between 0.2 and 0.4 represent an excellent fit (McFadden1979).
f Somer's D_x provides an assessment of the predictive ability of the model. It is the rank correlation between the predicted probabilities and the dependent variable.
g Significant at the 0.10 level, one-tailed test.
h Significant at the 0.05 level, one-tailed test.
i Significant at the 0.01 level, one-tailed test.
the fact that the reduced sample includes mainly manufacturing firms. Hypotheses H4 (PC) and H8 (CR) are not supported.

6.3 Sensitivity analysis
This section describes the analysis undertaken to examine the sensitivity of the results to (1) the threshold levels of disclosures, (2) leverage, (3) industry effects, and (4) size.

6.3.1 Threshold disclosure levels
Univariate tests were conducted on the explanatory variables at two threshold levels of semiannual earnings disclosure. To examine this further, two binomial logit models are employed to test the hypotheses between these threshold levels of interim disclosure. The logit results presented in Table 6.6 support the univariate analysis.

---

5 Due to the collinearity between AIP and OPC exhibited in Table 6.4, a logistic regression was run excluding AIP from model 3. The significance of the remaining variables were unchanged, except for OPC which was reduced to the 0.05 level.

6 Firms with a disclosure score of 0 were compared to those with a score of 1 or 2 (by setting the dependent variable at 0 if the disclosure score was 0 and 1 if the score was 1 or 2). In the second model firms with a score of 2 were compared to a score of 1.
Table 6.6
Binomial logit models of semiannual earnings disclosures

<table>
<thead>
<tr>
<th>Variables</th>
<th>Sign</th>
<th>Reduced sample (N=60)</th>
<th>Complete sample (N=158)</th>
<th>Reduced sample (N=50)</th>
<th>Complete sample (N=130)</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1: OC</td>
<td>+</td>
<td>0.2343 (1.42)</td>
<td>0.2792 (5.36) e</td>
<td>0.9858 (2.72) e</td>
<td>0.0603 (5.48) f</td>
</tr>
<tr>
<td>H2: AIP</td>
<td>-</td>
<td>-1.2244 (0.23)</td>
<td>-1.2320 (1.41)</td>
<td>0.8683 (0.20)</td>
<td>-0.8032 (0.95)</td>
</tr>
<tr>
<td>H3: DIV</td>
<td>+</td>
<td>1.7821 (3.43)</td>
<td>0.6787 (2.34) d</td>
<td>-0.0707 (0.01)</td>
<td>-0.5263 (1.34)</td>
</tr>
<tr>
<td>H4: PC</td>
<td>-</td>
<td>-0.8768 (0.34)</td>
<td>-0.3749 (0.23)</td>
<td>-0.4899 (0.15)</td>
<td>1.3628 (3.53) d</td>
</tr>
<tr>
<td>H5: EFE</td>
<td>-</td>
<td>-0.3950 (2.56) d</td>
<td>-0.1495 (2.60) e</td>
<td>-0.3069 (2.44) d</td>
<td>-0.2339 (4.33) e</td>
</tr>
<tr>
<td>H6: SVOL</td>
<td>-</td>
<td>-109.0225 (4.87) e</td>
<td></td>
<td>-27.8992 (0.65)</td>
<td></td>
</tr>
<tr>
<td>H7: OPC</td>
<td>-</td>
<td>-2.5488 (0.26)</td>
<td>-3.0724 (2.47) d</td>
<td>-1.6597 (0.31)</td>
<td>-1.5154 (1.47)</td>
</tr>
<tr>
<td>H8: CR</td>
<td>-</td>
<td>1.9291 (1.04)</td>
<td></td>
<td>0.2509 (0.04)</td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>a1</td>
<td>0.8214 (0.05)</td>
<td>1.5085 (1.23)</td>
<td>-0.5989 (0.06)</td>
<td>1.3264 (1.54)</td>
</tr>
<tr>
<td>Model chi-square</td>
<td>b</td>
<td>13.40 (8 d.f.)</td>
<td>26.01 (6 d.f.)</td>
<td>8.91 (8 d.f.)</td>
<td>17.62 (6 d.f.)</td>
</tr>
<tr>
<td>Likelihood ratio</td>
<td>b</td>
<td>0.248 (0.098)</td>
<td>0.176 (0.000)</td>
<td>0.128 (0.349)</td>
<td>0.097 (0.007)</td>
</tr>
<tr>
<td>Somers' Dxy</td>
<td>b</td>
<td>0.704 (0.000)</td>
<td>0.556 (0.000)</td>
<td>0.435 (0.000)</td>
<td>0.411 (0.000)</td>
</tr>
</tbody>
</table>

a The dependent variable is a binary variable. In model 1
Y = 0 if the disclosure score is 0 and Y = 1 if the score is 1 or 2.
For model 2, Y = 0 if the disclosure score is 1 and Y = 1 if the
disclosure score is 2.
b Statistics related to the logit analysis are defined in Table 6.5.
c The independent variables are defined in Section 5.2.
d Significant at the 0.10 level, one-tailed test.
e Significant at the 0.05 level, one-tailed test.
f Significant at the 0.01 level, one-tailed test.
In model 1 the variables OC, DIV, OPC, SVOL and EFE are significant (at the 0.05 level) indicating these variables influence the manager's decision to disclose "news" (at least the sign change) of semiannual earnings. At the secondary threshold disclosure level (the decision to disclose a point estimate of semiannual earnings) the variables OC, EFE and PC are significant.

6.3.2 Leverage
Leverage was excluded from the above analysis because agency costs associated with stockholder-bondholder conflict are more easily resolved by the use of contracts based on audited annual financial statements, rather than reporting frequency [see Schipper (1981)]. However, the sensitivity of the results to leverage is undertaken to facilitate the comparison between this study and LWZ (1981).

The inclusion of a leverage variable slightly improved the overall fit and the explanatory power of the model, but reduced the significance of AIP. Collinearity between LEV and AIP is the likely cause for this

---

7Leverage is measured by the sum of the book amount of term debt and the market value of preference capital as a ratio to the total market value of the firm.
effect. The coefficient for LEV is negative coefficient and significant at the 0.10 level. A possible explanation is that LEV (inversely) measures the total value of the firm financed by owners' equity and hence could be proxying for the agency costs associated with the stockholder-manager conflict, rather than the stockholder-bondholder conflict.

6.3.3 Industry
Table 6.1 indicates a clustering of semiannual earnings disclosure levels for some industries. To examine this issue further, firms with different semiannual disclosures were matched by at least two-digit NZSIC codes. N-chotomous logit was run on the resulting sample of 100 firms. The model chi-square for the industry matched sample is 23.52 and significant at the 0.001 level. Compared to model 3 in Table 6.5 the

---

8 The Spearman correlation between LEV and AIP is 0.2445 and is significant at the 0.01 level, which is consistent with Myers (1977) and the empirical results of LWZ (1981).

9 The relation between owners' equity and leverage is:

\[
LEV = 1 - \frac{\text{owners' equity}}{\text{total market value of the firm}}
\]

10 Four-digit NZSIC codes were used where possible, then three- and two-digit codes. Also the difference in disclosure score was maximized where possible. For example, firms with a disclosure score of 0 were matched within an industry with a firm having a disclosure score of 2.
likelihood ratio and Somers' $D_{xy}$ increases marginally. All variables remain significant at the same level as in model 3, Table 6.5, except for OPC which is not significant. Overall, the results of the industry matched sample are similar to the results reported in Table 6.5. This suggests that, while there could be some industry effect attributable to OPC, the results in Table 6.5 are not being driven by a single industry.\footnote{The Bowen, Noreen and Lacey (1981) matched pair design was not adopted because it tests for intra-industry differences in the explanatory variables.}

As a further check for an industry effect, Model 3 (in Table 6.5) was re-estimated with the inclusion of industry dummy variables. The inclusion of industry dummy variables resulted in a logit model with superior model chi-square, log likelihood ratio and Somers' $D_{xy}$. Logit models can be usefully tested against each other by calculating the following statistic:

$$-2\ln L_{M2-M1} = (-2\ln L_{M2}) - (-2\ln L_{M1})$$

\footnote{Firms were partitioned into industry groups based on two-digit SIC codes. Industry codes 31 and 39 consist of one observation in each and were therefore not given a dummy variable. The minimum observations in any industry was eight. Property, insurance and finance sectors were combined into a single industry. These procedures resulted in 12 industry dummy variables.}
This statistic has an asymptotic chi-square distribution with M2 - M1 degrees of freedom. In comparing Model 3 (Table 6.5) to the model which included the industry dummy variables the \(-2\ln L_{M2-M1}\) statistic is 11.52 (with 12 d.f.), which is not significant at the 0.10 level. Hence, an industry effect is not supported.\(^{13}\)

### 6.3.4 Issues relating to firm size

Firm size is a comprehensive variable which can proxy for several economic factors associated with size [see Ball and Foster (1982)]. Significant Spearman correlations between market size and other variables of interest are as follows: OC (.874), OPC (-.340), CR (.245), SVOL (.317), DIV(.180) and leverage (.247).\(^{14}\)

Size has been used in other studies to proxy for various other aspects of the firm. Size can proxy for agency costs of outside capital [Jensen and Meckling (1976), Leftwich, Watts and Zimmerman (1981)], leverage

---

\(^{13}\)Another interesting comparison is whether the six hypothesised explanatory variables increase the goodness of fit of the model over and above the industry dummy variables. This involves comparing a model which contains the six hypothesised explanatory variables and the 12 industry dummy variables to a model which includes only the industry dummy variables. The \(-2\ln L_{M2-M1}\) statistic is 32.00 (with 6 d.f.), which is significant at the 0.01 level. Hence, the hypothesised variables have a significant marginal impact on the goodness of fit of the model.

\(^{14}\)Variables not significantly associated with firm size are AIP, EFE and PC.
Holthausen (1981), Leftwich (1981)], information production costs [Firth (1980)], competitive advantage [Belkaoui and Kahl (1978)], and risk/income variability [Choi (1973)]. In this study an independent variable which is not strongly correlated to size is included in the logit model to specifically control for these factors. However, the high correlation between size and OC suggests that OC cannot be interpreted unambiguously as an "agency cost" variable.

Prior studies have shown that the effect of firm size on the choice of accounting method is nonlinear. This is important in this study because the sampled firms are smaller, on average, than nonsampled firms due to a bias in the data source. The same technique applied by Zmijewski and Hagerman (1981) and Daley and Vigeland (1983) was employed. The sample was dichotomized into equal subsamples of large and small firms based on firm value. Logit model 3 was then re-run on each subsample.

Partitioning the sample on the basis of size (firm value) has considerable impact on the significance of the explanatory variables. OC and SVOL are the only variables significant in both large firm and small firm subsamples. For the large firm (small firm) sample OC is significant at the 0.01 (0.05) level. AIP and OPC are only significant in the large firm sample (at the
0.05 and 0.01 level respectively). Whereas DIV and EFE are only significant (both at the 0.05 level) in the small firm sample. The model chi-square, log likelihood ratio and Somer’s Dxy are all superior in the logit model for the large firm sample.

In the Zmijewski and Hagerman (1981) income strategy models, the size variable was only significant for the large firm sample, whereas in Daley and Vigeland (1983) the size variable is significant only in the small firm sample. The conclusion reached by Daley and Vigeland (1983, p.208) is reiterated: "that the role of size variables in the choice of accounting method is not yet well understood".

6.4 Summary
The analysis in this chapter indicates that outside capital (OC) is associated with the level of semiannual disclosure in nearly all models and threshold levels of disclosure; providing strong support for hypothesis H1. However, the possibility of OC proxying for a size effect cannot be discounted.

Assets in place (AIP) is significant in model 3 (Table 6.5) and in the large firm sample only, providing only weak support for hypothesis H2. This result contrasts with the "anomalous" behaviour of AIP in LWZ (1981) and the results of Chow and Wong-Boren (1987) which do not
exhibit a significant association between AIP and a general disclosure index of Mexican corporations. However, neither LWZ (1981) nor Chow and Wong-Boren (1987) dichotomized their sample into large and small firms.15

Recall that the payment of an interim dividend (DIV) is proxying for the agency costs of reducing bondholders wealth by paying out asset financed or debt financed dividends. DIV is significant at the basic threshold level (model 1 in Table 6.6), but not at the secondary threshold level. That is, DIV is associated with the decision to disclose some "news" (at least a sign change of earnings). This result is plausible as the notification of the sign change in earnings is sufficient to indicate the impact that any interim dividend has on the bondholders' "inventory of funds".

This result is of some interest as LWZ (1981) did not find the payment of an interim dividend significant. This conflicting cross cultural result can be reconciled by differences in the institutional (legal and contracting) arrangements between United States of America and New Zealand. In the USA, agency costs of dividend payments are reduced by the contracting

15 LWZ (1981) did partition their sample according the exchange listing which could be proxying for size.
process as dividend restrictions are generally written into bond covenants. Dividend covenants are extremely rare in New Zealand. While there is a general legal requirement that dividends can only be made from profits, it is legally possible to pay a dividend out of accumulated past profits. However, such a payment would reduce the bondholders' "inventory of funds". Hence, managers can reduce agency costs associated with paying an interim dividend by interim reporting.

Earnings volatility (both forecast error and seasonality) also have general significance in all models. Thus supporting hypotheses H5 and H6, the cost-related explanation of earnings volatility and voluntary disclosure, and the results of Waymire (1985).

Most studies examining voluntary accounting choice [e.g., LWZ (1981)] specifically assume there are no cross sectional differences in the out of pocket costs of information production. In this study the out of pockets costs of determining interim inventory (OPC) are found to be associated with the level of firm's semiannual earnings announcements.

Hypotheses H4 (political costs of disclosure) and H8 (competitive costs of disclosure) are not supported.
The next chapter examines the hypotheses developed in Chapter Four on the sample of firms that changed their level of semiannual earnings disclosure during the period 1973 to 1976.
CHAPTER SEVEN

RESULTS: CHANGES IN DISCLOSURE LEVELS

The preceding chapter analysed the level of semiannual earnings disclosures on the first announcement reported in the NZSE Official Record during the 1973-76 period. Subsequent announcements by the same firm are not included because they are not independent observations and their inclusion would violate the underlying assumption of independence required by test statistics. In this chapter consideration is given to subsequent voluntary announcements, by examining the association between the independent variables and firms which change their level of semiannual earnings disclosure.

7.1 Descriptive statistics and univariate tests

Table 5.1, records by calendar year, the transition matrix for 148 firms that had a subsequent semiannual announcement reported in the NZSE Official Record. Fifty three firms changed their level of semiannual earnings disclosure, with 28 increases in disclosure and 25 decreases. Four firms increased the frequency of their dividend payout to semiannually, of which only one increased its level of semiannual disclosure.
Table 7.1 reports summary statistics of the independent variables analysed by the change in the level of earnings disclosure. A Kruskal-Wallis one way analysis of variance was employed to test the hypothesis that the increases, decreases and no change samples came from the same population. SVOL and OPC are significant at conventional levels. A Mann-Whitney U test was also used to test for differences in the explanatory variables between increases, decreases and no change samples.\(^1\) SVOL is significant (at the 0.10 level) comparing the increases in disclosure versus the decreases in disclosure subsamples. However, the direction is opposite to that hypothesised. Firms that change their semiannual earnings disclosure (both increases and decreases) have significantly (at the 0.05 level) higher OPC than those firms that do not change their level of disclosure.

Additional univariate tests were undertaken on the change in the level of semiannual earnings disclosure and changes in the independent variables OC, AIP, EFE, and OPC.\(^2\) The result of this analysis is presented in Table 7.2. None of the

\(^1\)Three pairwise comparisons were made: (1) between increases and decreases in semiannual disclosure; (2) between increases and no change in disclosure; and (3) between decreases and no change in disclosure.

\(^2\)Independent variables PC, SVOL, DIV and CR exhibit very little or no time-series movement because of the way in which they are measured. Hence these variables are excluded from the analysis in Table 7.2.
### Table 7.1
Descriptive statistics of the independent variables

<table>
<thead>
<tr>
<th>Variables Hypotheses</th>
<th>Change in disclosure level of semiannual earnings</th>
<th>K-W Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Increases (n=28)</td>
<td>No change (n=95)</td>
</tr>
<tr>
<td>OC H1: &gt; Median</td>
<td>4.4870</td>
<td>4.8000</td>
</tr>
<tr>
<td></td>
<td>Mean</td>
<td>8.7017</td>
</tr>
<tr>
<td></td>
<td>Std. dev</td>
<td>11.4318</td>
</tr>
<tr>
<td>AIP H2: &lt; Median</td>
<td>0.5275</td>
<td>0.4620</td>
</tr>
<tr>
<td></td>
<td>Mean</td>
<td>0.5641</td>
</tr>
<tr>
<td></td>
<td>Std. dev</td>
<td>0.2549</td>
</tr>
<tr>
<td>DIV H3: &gt; Mean</td>
<td>1.8214</td>
<td>1.8315</td>
</tr>
<tr>
<td></td>
<td>Std. dev</td>
<td>0.4755</td>
</tr>
<tr>
<td>PC H4: &lt; Mean</td>
<td>0.0714</td>
<td>0.0947</td>
</tr>
<tr>
<td></td>
<td>Std. dev</td>
<td>0.2622</td>
</tr>
<tr>
<td>EFE H5: &lt; Median</td>
<td>1.2358</td>
<td>1.0680</td>
</tr>
<tr>
<td></td>
<td>Mean</td>
<td>2.4495</td>
</tr>
<tr>
<td></td>
<td>Std. dev</td>
<td>4.7061</td>
</tr>
<tr>
<td>SVOL H6: &lt; Median</td>
<td>0.0189</td>
<td>0.0124</td>
</tr>
<tr>
<td></td>
<td>Mean</td>
<td>0.0209</td>
</tr>
<tr>
<td></td>
<td>Std. dev</td>
<td>0.0106</td>
</tr>
<tr>
<td>OPC H7: &lt; Median</td>
<td>0.3399</td>
<td>0.2962</td>
</tr>
<tr>
<td></td>
<td>Mean</td>
<td>0.3278</td>
</tr>
<tr>
<td></td>
<td>Std. dev</td>
<td>0.1504</td>
</tr>
<tr>
<td>CR H8: &lt; Median</td>
<td>0.7800</td>
<td>0.7800</td>
</tr>
<tr>
<td></td>
<td>Mean</td>
<td>0.7064</td>
</tr>
<tr>
<td></td>
<td>Std. dev</td>
<td>0.2379</td>
</tr>
</tbody>
</table>

a Independent variables are described in Section 5.2. Medians are not reported for the binary variables DIV and PC.

b The test statistic is the Kruskal-Wallis test, chi-square approximation, (one-tailed significance level in parenthesis).
Table 7.2

Descriptive statistics of changes in the independent variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Hypotheses</th>
<th>Change in disclosure level of semiannual earnings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Increases</td>
</tr>
<tr>
<td>OC</td>
<td>H1: &gt;</td>
<td>Median</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.1220</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.43</td>
</tr>
<tr>
<td>AIF</td>
<td>H2: &lt;</td>
<td>Median</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.15</td>
</tr>
<tr>
<td>EFE</td>
<td>H5: &lt;</td>
<td>Median</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-0.50</td>
</tr>
<tr>
<td>OPC</td>
<td>H7: &lt;</td>
<td>Median</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.12</td>
</tr>
</tbody>
</table>

a Independent variables are described in Section 5.2.

b The test statistic is the Kruskal-Wallis test, chi-square approximation, (one-tailed significance level in parenthesis).
differences in the independent variables exhibited in Table 7.2 is significant at conventional levels. Furthermore, in many instances the differences are opposite to the direction hypothesised.

7.2 Multivariate analysis
Changes in disclosure were also analysed using several logit models. The dependent variable was set at zero if the firm decreased its disclosure and one if the firm increased its disclosure. Alternatively the dependent variable was specified as $2 = \text{a disclosure increase}$, $1 = \text{no change in disclosure}$, and $0 = \text{a disclosure decrease}$. Both levels and changes in the explanatory variables were employed as independent variables in logit models. The model chi-square was not significant, at the 0.10 level, for any of the logit models estimated. Hence, the logit models are not reported.
7.3 Summary

Leftwich, Watts and Zimmerman (1981, p.74) suggest that any replication should "...concentrate on the change in the variables around the time of the change in reporting frequency". This suggestion provides the motivation for the analysis undertaken in this chapter. However, the results are not strong.

The next chapter concludes by providing a summary of the thesis and comments on the possible reason for the weak results.

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3Note, however, this chapter is not strictly a replication, as LWZ (1981) examine reporting frequency not the level of earnings disclosure.
CHAPTER EIGHT

SUMMARY AND CONCLUSION

This thesis reviews the evolution of corporate interim reporting in New Zealand. It records the attempts to regulate interim reporting by the SEANZ and the related lobbying behaviour. The regulation of interim reporting is interpreted as a series of self-interest actions by affected parties. The thesis also provides evidence on the extent of voluntary semiannual reporting practice immediately prior to regulation. It then examines the association between corporate characteristics and the voluntary disclosure of semiannual earnings during the period 1973 to 1976.

The thesis commences (in Chapter Two) with a review of research that addresses the accounting issue of interim reporting. Prior research examines issues ranging from the forecast accuracy of interim earnings to the information content of interim earnings as reflected in security prices. Prior research that examines the association of corporate characteristics and the voluntary disclosure is also reviewed.
In a related study Leftwich, Watts and Zimmerman (1981) focus on external reporting frequency. This thesis extends their analysis. First, it focuses on attributes of interim financial reports (other than reporting frequency), thereby incorporating a methodological refinement suggested by LWZ (1981). Second, it develops empirical proxies for information production costs of interim reporting, which are found to be related to the level of semiannual earnings disclosure. LWZ employ a "derived demand" approach, whereby it is explicitly assumed there is no cross-sectional or time-series variation of information production costs and the disclosure decision is modelled as an increasing function of agency costs. Verrecchia (1983) suggests that the extent of voluntary disclosure is a decreasing function of proprietary disclosure costs. Hence, LWZ are unable to distinguish between disclosure thresholds because of the variation in proprietary costs of disclosure. Third, it adds to the external validity of the LWZ (1981) results by examining interim reporting in a different institutional domain. An interesting result is the significant association between the level of interim earnings disclosure and the payment of an interim dividend, which is not found significant by LWZ.

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1 LWZ (1981) examine voluntary interim reporting because of the high cost of investigating voluntary annual reporting.
Different institutional and contracting arrangements are suggested to account for this result.

It is observed (in Chapter Three) that many firms made semiannual announcements prior to interim reporting becoming a SEANZ listing requirement. It is also noted that the level of voluntary semiannual earnings disclosures varied. Why? To answer this research question, this thesis examines corporate characteristics associated with the level and changes in the level of voluntary semiannual announcements released in the period between 1973 and 1976.

The act of voluntary disclosure is endogenous, representing the outcome of some constrained optimisation problem (still unknown to researchers), wherein the manager of the firm evaluates the cost-benefit relationship and decides on the level of semiannual earnings disclosure. Arguments for the costs and benefits of interim disclosure (relating to agency costs of monitoring, political costs, earnings volatility and information production costs) are hypothesised in Chapter Four.

\[2\] If this view is not accepted then voluntary disclosure becomes an accident rather than a product of rational choice. This would preclude observing any systematic association between firm characteristics and voluntary disclosures.
The empirical results of Chapter Six can be summarised as follows:

(1) The level of semiannual earnings disclosure is positively associated with the number of ordinary shares issued and the payment of an interim dividend. This suggests that the level of agency costs influence the manager's choice of semiannual earnings disclosure.

(2) The level of semiannual earnings disclosure is negatively related to the ratio of inventory to total assets, high unexpected earnings and a measure of industry seasonality. This suggests that firms will lower interim earnings disclosure if information production costs of providing a credible interim signal are high.

(3) Political costs and competitive costs of disclosure are not related to the level of interim earnings disclosure.

(4) Sensitivity analysis indicates that the significance of the explanatory variables is dependent upon both the threshold level of disclosure and firm size. Industry is not an important determinant of the results.
While this study shows that several hypothesized variables are significant, the poor likelihood ratios achieved by the logit models presented indicate that much of the cross-sectional variation of discretionary semiannual profit disclosures remains unexplained. Furthermore, the variables significant in Chapter Six do not explain why firms change their level of disclosure (Chapter Seven).

Several possible reasons exist for the weak explanatory power. First, Dye (1985) suggests that disclosure may exacerbate principal-agent problems between management and stockholders. This can arise if information useful for forecasting net income is detrimental for contracting purposes, or vice versa. Second, this study adopts a single item focus. LWZ (1981) observe that voluntary disclosure is only one monitoring mechanism. Alternative mechanisms which substitute or complement voluntary disclosure include private disclosure, the use of outside directors, exchange listing, executive compensation schemes, and restrictions on resource allocation [for example, mergers, asset disposal and new financing]. It is also possible that firms produce the same "amount of disclosure" and substitute discretionary disclosures [Dye (1985)]. Unfortunately, the current stock of knowledge has not provided theories with testable propositions to empirically
examine the strategic behaviour of accounting disclosures [Amershi, Demski and Wolfson (1982)].

Nevertheless, this study has implications for the standard setting process. It provides evidence that the financial environments of firms which voluntary disclose semiannual earnings are systematically different from nondisclosers. In particular cross-sectional differences in the explanatory variables employed arise between large and small firms and at different threshold levels of disclosure. Hence, imposing the same level of disclosure requirements on all firms would impose relatively greater costs on some firms but not on others.\(^3\) The results of this study indicate that some firms do not voluntarily disclose interim earnings because the private value of disclosure is negative. However, the issue of whether the social benefits of interim reporting might outweigh the private costs,\(^4\) if disclosure is mandated, has not been addressed.

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\(^3\)Any interpretations of these findings for accounting policy regulators depend on the explanatory variables surrogating for the costs and benefits of disclosing interim earnings.

\(^4\)For example, Hakansson (1977) suggests that full disclosure makes a minority of investors (typically well-endowed) worse off, while improving the lot of the majority of investors.
REFERENCES


Clinton, J., Buying Shares in New Zealand (A.H. & A.W. Reed, Auckland 1971).


