MANAGEMENT's CHOICE OF ADOPTION DATE OF STATEMENT OF FINANCIAL ACCOUNTING STANDARDS NO. 95: A POSITIVE THEORY APPROACH

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- James Blair Shelton
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To Jane

This thesis is dedicated to my wife,
Jane Grayson Shelton, whose
encouragement and sacrifices
made it possible.

"Who can find a virtuous woman? for
her price is far above rubies."

- Proverbs 31:10

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Management's Choice of Adoption Date of Statement of Financial Accounting Standards No: 95: A Positive Theory Approach

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ABSTRACT

This study identifies factors which are influential in determining management's choice of the timing of an accounting disclosure (the release of cash flow information; that is, the adoption of SFAS No. 95.) This disclosure does not affect reported net earnings. Several of the factors which have been shown to affect management's choice of accounting procedures that do affect reported net income are shown here to affect disclosure choice. The unique contribution of this study is the extension of the positive accounting theory of choice into the area of non-income-affecting disclosure choices, specifically cash flow disclosure.

Size, the degree of management's control and the percentage change in a performance measure (cash flow from operations) are shown by univariate methods to significantly influence management's choice of adoption date of SFAS No. 95, entitled "Statement of Cash Flows." A relatively unexplored variable, the value of management's stock options, was found to influence this choice. A multivariate procedure, LOGIT, was significant at the level of the overall model. The importance of one variable, the basis of the funds statement in the year prior to the adoption of SFAS No. 95, dominated the other variables. With this variable removed, the overall model remained significant and the individual variables of the change in cash flows form operations and the degree of management control were significant.

Chapter One

The Research Question, Overview of the Study, and Expected Contributions of the Study

The primary purpose of the proposed study is to develop a model to explain and predict management's choice of adoption date of Statement of Financial Accounting Standards No. 95, entitled "Statement of Cash Flows" (SFAS No. 95) [FASB (1987)]. Since the seminal work of Watts and Zimmerman (1978) a considerable literature has developed regarding management's choices of accounting methods [e.g., Cushing and LeClere (1992), Ayres (1986), Zmijewski and Hagerman (1981)] and of disclosures [e.g., Chow and Wong-Boren (1987)]. Certain variables have been shown to influence management's choice of accounting procedures and of disclosures across a variety of research areas. However, no work specifically has addressed management's choice of disclosing cash flow information. If the same factors motivating choices affecting both income and cash flows, or income alone, can be shown to motivate cash disclosures, the literature in both the areas of positive accounting theory and of the importance of cash flow information relative to earnings information can be expanded significantly.

This chapter will highlight the reasons for the recent interest in cash flows, the concept that cash flows act as signals, and the factors identified in the positive accounting literature as having influence in many applications. These

are discussed in greater depth in Chapters Two and Three. The sample selection and statistical methods employed are discussed in Chapter Three. Results and conclusions are discussed in Chapters Four and Five. This chapter will conclude with the expected contributions of the study.

1.1 RECENT INTEREST IN CASH FLOWS

When the Financial Accounting Standards Board (FASB) was created, one of its missions was to develop a conceptual framework for the analysis of accounting objectives and procedures. In 1978, the FASB issued Statement of Financial Accounting Concepts No. 1, entitled "Objectives of Financial Reporting by Business Enterprises" (SFAC No. 1) [FASB (1978)]. This statement concludes that a major purpose of financial reporting is to provide information useful in assessing the amounts and likelihood of a firm's future cash flows. The FASB added, in April 1985, the possibility of replacing the funds statement with a statement of cash flows to its agenda of possible standards statements. The discussion period that followed showed wide support for a statement of cash flows. Cash flows were made a mandatory disclosure for firms with fiscal periods ending after July 15, 1988 [FASB (1987) para. 34].

1.2 IMPORTANCE OF CASH FLOW INFORMATION

Even though the FASB mandated the inclusion of a statement of cash flows as part of a full set of financial statements, it maintained that accrual-based earnings statements provided superior information on which to assess

the amounts and likelihood of a firm's future cash flows. A literature developed addressing the question of the importance of cash flows[1]. Early results of investigations were mixed, but later studies supported the idea that investors valued the information in a cash flow statement in addition to the information in accrual earnings statements.

1.3 CASH FLOWS AND SIGNALING

During and somewhat before the time period of increased interest in cash flows by the accounting community, researchers in the areas of economics and finance [e.g., Asquith and Mullins (1986)] began to search for reasons why investors should value the receipts of cash dividends. A frequent conclusion of the research was that the payment of cash dividends constituted a clear, unmistakable signal that management had access to information that lead management to believe that the future cash-generating prospects of the firm were greater than might appear from other signals, such as published financial reports. Researchers in the accounting area [e.g., Lev and Penman (1990)] investigated the voluntary release of forecasts by management and concluded that management issued forecasts as signals of a company's future cash-generating prospects.

1.4 ROBUST HYPOTHESIS OF POSITIVE ACCOUNTING

Researchers of the factors influencing management's choice of accounting procedures that have an effect on

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[1]. A review of this work is given in Neill et. al (1991).

reported accounting income have identified four factors that proved to be influential in a variety of applications (e.g., Watts and Zimmerman [1978], Ayres [1986]). These factors are: Managements' Compensation Effects, Existence and Tightness of Restrictive Debt Covenants, Degree of Autonomy granted Management, and Size of the firm. (These are descriptive names, not the nomenclature of the positive accounting studies). Some investigations have been conducted in areas that do not involve choices that have an effect on reported accounting income [e.g., Chow (1982)] and on management's choice of disclosures [e.g., Chow and Wong-Boren (1987)]. The same four factors have been found significant in explaining these choices that do not involve reported accounting income.

1.5 EXPECTED CONTRIBUTIONS OF THE STUDY

The expected contributions of the proposed study include:

1. If the same factors proven influential in management's choice of adoption date of accounting procedures that affect reported net income also are found to be influential in management's choice of disclosure date of cash flow information, the inference will be that managers believe that cash flows are valued in the same way that income information is valued. This will add to the literature concerning the importance of cash flows.

2. Hypothesizing that the scenario expressed in (1) above is confirmed, the implication is that managers view the disclosure of cash flow information as the issuing of a

signal. This will tie the signaling literature, which is principally in the finance area, to the accounting area, expanding the literature in both fields.

3. Positive accounting research has assumed that management is motivated by self interest to the point that they will make choices that add to their welfare at the expense of stockholders and others with an interest in the firm. However, positive accounting theory as envisioned by Watts and Zimmerman (1990) allows for the distinct possibility that managers make choices that benefit all those with an interest in the firm (e.g., stakeholders). The proposed study includes a direct test of the two different views of management's motivation.

4. Evidence that helps to explain and predict management's choice of disclosures should prove valuable to authoritative and regulatory bodies, such as the FASB and the Securities and Exchange Commission, in proposing new standards or regulations or in evaluating existing standards and regulations.

5. Investors and financial analysts have reason to value any information explaining the disclosure choices made by management, as such information may influence their resource allocation decisions.

6. The proposed study includes a variable that has not been examined sufficiently in prior research to include it in the list of robust hypotheses. This variable is the value of stock options held by management. The inclusion of stock

options as an explanatory variable in this study will add to the positive accounting literature.

7. The proposed study will extend the positive theory of accounting choice into the cash flow area.

Chapter Two

Relevant Prior Research

This chapter will review relevant literature concerning cash flows and the objectives of financial reporting, the development of cash flow reporting requirements, the importance of disclosures as signaling devices and the implications of the positive theory of accounting choice on management's decision to disclose cash flows.

2.1 CASH FLOWS AND THE OBJECTIVES OF FINANCIAL REPORTING

Decision usefulness can be stated as the overall objective of financial reporting. "User relevance" [Neill et al. (1991), 117] is an alternative wording of this concept. This is expressed by the Financial Accounting Standards Board (FASB) in Statement of Financial Accounting Concepts No. 1, entitled "Objectives of Financial Reporting by Business Enterprises" (SFAC No. 1) [FASB (1978)] as:

> Financial reporting should provide information that is useful to present and potential investors and creditors and other users in making rational investment, credit, and similar decisions. The information should be comprehensible to those who have a reasonable understanding of business and economic activities and are willing to study the information with reasonable diligence (para. 34).

Information useful in assessing future cash flows is identified specifially as valued information in SFAC No. 1:

> Financial reporting should provide information to help present and potential investors and creditors and other users in assessing the amounts, timing, and uncertainty of prospective cash receipts from dividends or interest and the proceeds from the sale, redemption,

> or maturity of securities or loans. The prospects for those cash receipts are affected by an enterprise's ability to generate enough cash to meet its obligations when due and its other cash operating needs, to reinvest in operations, and to pay cash dividends and may also be affected by perceptions of investors and creditors generally about that ability, which affect market prices of the enterprise's securities. Thus, financial reporting should provide information to help investors, creditors, and others assess the amounts, timing, and uncertainty of prospective net cash inflows to the related enterprise (para. 37).

The accrual basis of accounting is considered in SFAC No. 1 to provide information superior to that of a statement showing cash flows: "information about enterprise earnings and its components measured by accrual accounting generally provides a better indication of enterprise performance than information about current cash receipts and payments ... (para. 44)"; "... financial statements that show only cash receipts and payments during a short period, such as a year, cannot adequately indicate whether or not an enterprise's performance is successful ... (para. 43)."

Six years after the release of SFAC No. 1, the FASB concluded in SFAC No. 5, entitled "Recognition and Measurement in Financial Statements of Business Enterprises" [FASB (1984)] that "... a full set of financial statements for a period should show ... cash flows during the period ... (para. 13)." The FASB maintained in SFAC No. 5 the position that an accrual basis statement is superior for assessing future performance:

> ... but a cash flow statement provides an incomplete basis for assessing prospects for future cash flows because it cannot show inter-period relationships ... Statements of earnings and comprehensive income, especially if used in conjunction with statements of financial position, usually provide a better basis

> for assessing future cash flow prospects than do cash flow statements alone (para. 24).

In 1987, the suggestion made in SFAC No. 5 that a statement of cash flows be made a part of a full set of financial statements was operationalized in Statement of Financial Accounting Standards No. 95, entitled "Statement of Cash Flows" (SFAS No. 95) [FASB (1987)]. The FASB's basic reason for requiring a statement of cash flows was that the existing emphasis on working capital was deemed unsatisfactory in meeting the requirements of SFAC No. 1 and SFAC No. 5. Comments received during the exposure draft period aided in this conclusion:

> To achieve those objectives requires that the statement focus on flows of cash rather than flows of working capital. An overwhelming majority of respondents agreed with that focus. Many made negative comments on the usefulness or working capital as a concept of funds, generally questioning its relevance since positive working capital does not necessarily indicate liquidity nor does negative working capital necessarily indicate illiquidity [FASB (1987), para. 50].

Before and following the release of SFAS No. 95, "A continuing controversy concerning the measurement and reporting of firm performance revolves around the fundamental issue of how to provide the best information for assessing future cash flows [Neill et al. (1991), 117]." Neill et al. (1991) state further that:

> The role of cash flow information is central to our understanding of how the market responds to the fundamental accrual notion underlying modern financial reporting. It may be the case that some of the accountant's allocations of cash flows across time periods provide new and useful data while others may only obscure economic reality. It is hoped that careful

> research on cash flows and accruals will continue to contribute to the emerging literature and our understanding of the economic role of accounting information (pg. 145).

The proposed study will contribute to our understanding of the role of cash flow information in the economy by gathering evidence that supports or refutes the proposition that managers believe cash flow information is perceived by investors in the same manner as earnings information.

2.2 PROGRESSION OF REPORTING REQUIREMENTS FOR CASH FLOWS

When the FASB released SFAC No. 1 in 1978, existing reporting requirements for a full set of financial statements consisted of a balance sheet, an income statement, and a statement of changes in financial position. The statement of changes in financial position (frequently called the funds statement) was made a part of a full set of financial statements by Accounting Principles Board Opinion No. 19 (APB No. 19), entitled "Reporting Changes in Financial Position" [AICPA 1972)]. The funds statement was a two-part statement, reporting "Sources and Uses of Funds." Funds could be defined in a number of ways; working capital was the most frequent definition (see Table 1). The FASB's basic reason for replacing the funds statement with a statement of cash flows, as discussed in Section 2.1, was that the existing emphasis on working capital was deemed unsatisfactory in meeting the objectives of SFAC No. 1 and SFAC No. 5 to provide information useful in assessing future cash flows. In addition, specific reasons for changing existing practice as given in FASB No. 95

included limiting diversity of practice:

> ... certain problems have been identified in current practice, including the ambiguity of terms such as **funds** (emphasis in the original), lack of comparability arising from diversity in the focus of the statement (cash, cash and short-term investments, quick assets, or working capital) and the resulting differences in definitions of funds flows from operating activities (cash or working capital) differences in the format of the statement (sources and uses format or activity format), variations in classifications or specific items in an activity format, and the reporting of net changes in amounts of assets and liabilities rather than gross inflows and outflows. The lack of clear objectives for the statement of changes in financial position has been suggested as a major cause of that diversity (para. 2).

The definition of cash in the statement of cash flows prescribed by SFAS No. 95 allows for little variation (paragraphs 7 - 10). In general, cash flows are to be reported gross as opposed to net (paragraphs 11 - 13). The reporting format is to be three-part: cash receipts and cash payments classified into investing, financing, and operating activities (para. 14). Detailed guidance and prescription is given regarding the classification of specific cash receipts and cash payments into the three categories (paragraphs 15 - 27). The resulting cash flow statement differs considerably from the former funds statement, as shown in Exhibits 1 and 2.

SFAS No. 95 contains a section entitled "Appendix A: Background Information." The following history of the progression of cash flow reporting requirements is drawn from that section (paragraphs 35 - 43):

In December 1980, the FASB issued a discussion memorandum, entitled "Reporting Cash Flows, Liquidity, and Financial Flexibility" [FASB (1980)]. This discussion memorandum raised the question of the focus of the funds flow

statement (or Statement of Changes in Financial Position): Is working capital an adequate focus, or should the focus be cash (para. 35)? In November 1981, the FASB issued an exposure draft of a proposed SFAC, entitled "Reporting Income, Cash Flows, and Financial Position of Business Enterprises" [FASB (1981)]. This exposure draft concluded that cash and not working capital should be the focus of funds flow reporting (para. 36). In December, 1984, SFAC No. 5, entitled "Recognition and Measurement in Financial Statements of Business Enterprises" [FASB (1984)], was issued. This SFAC, which was released in exposure draft form three years earlier [FASB (1981)], concluded that, in concept, a cash flow statement should be part of a full set of financial statements (para. 36). Details of cash flow reporting issues (including the format of a cash flow statement) were not addressed in the **Concepts** Statements. They were addressed only in the **Standards** statements. The FASB took this approach in part to allow the Financial Executives Institute (FEI) to conduct research of its own (para. 37).

In late 1981, the FEI encouraged its members to change from a working capital focus in their funds statements to a focus on cash and short-term investments. The FEI also encouraged enterprises to experiment with alternative formats, such as the grouping of items by operating, investing and financing activities. This experimentation was in keeping with the authoritative literature, APB No. 19, which allowed flexibility in the focus and form of the statement. In 1984,

the FEI's research affiliate, the Financial Executives Research Foundation, published a research study, entitled "The Funds Statement: Structure and Use," that analyzed the results of the experimentation encouraged by the FEI (para. 38). Different definitions of cash and cash flow from operations were encountered, as well as different methods of presentation (para. 38).

In April, 1985, the FASB added cash flows to its agenda. SFAS No. 95, entitled "Statement of Cash Flows," was released in exposure draft form in July 1986 (para. 41). The exposure draft proposed standards for cash flow reporting that required a statement of cash flows as part of a full set of financial statements, in place of a funds statement. SFAS No. 95 was released in final form in November 1987, with an effective date of fiscal years ending after July 15, 1988 (para. 34).

Based on the events described above, a calendar-year firm could have adopted a cash flow statement in 1987 or 1988 and could have adopted a cash-basis funds statement in 1980, 1981, 1982, 1983, 1984, 1985, 1986 or 1987. It also is possible for a firm to have adopted a cash-basis funds statement prior to 1980, as APB No. 19 permitted that basis. These possible adoption dates for a calendar-year firm are shown in Table 2.

Summary:

Cash flow reporting requirements were instituted in response to the objective of financial reporting, as stated in SFAC No. 1, that financial reporting should help users "in

assessing the amounts, timing, and uncertainty of prospective cash receipts ... [FASB (1978) para. 37]." The existing emphasis on working capital was deemed inappropriate. Firms were encouraged to disclose cash flows prior to the effective date of FASB No. 95. As discussed in the next section, firms may have elected early disclosure of cash flows in order to signal investors of the firm's future cash flow prospects.

2.3 SIGNALING AND CASH FLOWS

The concept that management might undertake an action in order to signal investors of their superior knowledge of the firm's future prospects appeared in the accounting, finance and economics literature with the observation in Fama et al. (1969) that excess returns on common stock followed a stock split. Fama et al. theorized that the stock split acted as a signal that an increase in dividends was forthcoming; if an increase in dividends did not materialize, the excess returns vanished [Fama et al. (1969), 17]. Without saying so specifically, Fama et al. assumed an information asymmetry between investors and management.

A direct mention of information asymmetry between buyers and sellers appeared in the economics literature with an article using the market for used cars as an example [Akerlof (1970)].

In Akerlof's example, sellers of used cars know whether their cars are of inferior quality ("lemons"). Buyers do not know the quality of the used cars and will offer a price reflecting average quality. In this market, "lemons" may drive out the

better cars [Akerlof (1970), 491]. Akerlof proposed that brand names, licensing, certification practices and diplomas from educational institutions serve to reduce the market's uncertainty over quality. Spence (1973) proposed that educational attainment acts as a signal of a worker's productivity and developed an equilibrium theory of signaling in job and product markets.

Leland and Pyle (1977) proposed that entrepreneurs will invest in their own projects as a signal of project quality and built a model of signaling equilibrium based on the fraction of ownership in a project retained by the entrepreneur. Pastena and Ronen (1979) stated that there is " ... a growing interest in the extent to which management's actions serve as signals (pg. 551)." Hughes (1986) extended Leland and Pyle's (1977) univariate signaling model to include disclosure as a second signal of value. She proposed that an entrepreneur will communicate inside information about a firm's future cash flows through a direct statement or disclosures about the firm's value.

A number of researchers theorized that managers, under conditions of information asymmetry, pay dividends or undertake stock repurchases in order to signal their superior knowledge of their firm's ability to generate future cash flows. Results of investigations confirmed this hypothesis, as in the studies by Gonedes (1978), Aharony and Swary (1980), Miller and Rock (1985) and Mann (1989). Aharony and Swary's (1980) discussion of signaling activity is typical of these

studies: "Assuming that managers possess inside information about their firm's future prospects, they may use various signaling devices to convey this information to the public. Two of the most important signaling devices available are earnings and dividend figures (pg. 1)." Ross (1977) theorized that signaling activity altered the perceived risk class of firms that increased dividends. He stated that what was valued by the market was not the actual risk class of the firm, but was the perceived risk class of the firm. Ross concluded that a firm alters its financial structure in order to send a signal that alters the market's perception of the firm's risk class "even though the actual risk remains unchanged (pg. 25.)"

The ability of a firm to generate cash flows would, in a setting characterized by complete and costless transfer of information (i.e., in the perfectly competitive environment of Modigliani and Miller [1958]), be as obvious from the other sources of information released concerning a firm as from the payment of dividends. The payment of dividends would appear to be an unnecessary and expensive means of communication. Asquith and Mullins (1986) replied to this argument with the assertion that the clear, understandable nature of a payment of cash make the payment of cash an effective signaling device - "other signals, such as earnings reports, are too complex and detailed (pg. 35)." Abdel-Khalik (1985) viewed cash flow as a signal in his investigation of the effect on management's remuneration of a switch to LIFO. He stated that " ... the

LIFO change generates conflicting valuation signals in that it decreases the firm's reported accounting income, but increases its net operating cash inflows by reducing its tax liabilities (pg. 428)."

The release of voluntary forecasts by management has been examined from a signaling perspective. Penman (1980) undertook an investigation of the voluntary disclosure of corporate earnings forecasts in part to determine if they were issued by a broad spectrum of companies. He concluded that "it appears that only the exceptional firms issue forecasts (pg. 46)." Verrechia (1983) hypothesized that a manager decides whether to disclose a signal on the basis of the manager's beliefs concerning the information's effect on the company's stock price. Dontoh (1989) proposed that the firm's decision to voluntarily disclose information depends on its conjectures about the beliefs held by competitors and investors. Lev and Penman (1990) conducted an investigation of forecasting versus non-forecasting firms and concluded that "earnings forecasts are used by managers of 'good news' firms in a signaling or screening scenario to screen themselves from other firms (pg. 55)." Trueman (1986) proposed that the voluntary release of earnings forecasts could serve to influence investors' opinions of the manager and of the company and thus raise firm value whether the forecast is "good news" or not, because releasing a forecast and then obtaining the forecasted position would demonstrate management's ability to alter production schedules in order to

obtain a specified result. Livnat and Zarowin (1990) include a section entitled "Signaling effects of financing cash flows" in their research on the information content of cash-flow components (pg. 29)."

Dye's (1990) theoretical article compared the disclosures firms would seek to make voluntarily with "optimal" mandated disclosures in a single-period, multi-firm model in which there are covariances between firm's cash flows. He stated that the stylized representation of a firm's disclosure policy that he used in this article is not appropriate for studying voluntary earnings forecasts, were firms have control over the details of what is to be disclosed after receiving private information. **"In such situations, signaling phenomena must be considered explicitly**, whereas in our setting, signaling is irrelevant (emphasis added) (pg. 5)."

Summary / Conclusion

A review of the relevant signaling literature reveals that management issues signals when they believe that such signals will influence investors' valuation of the firm favorably. Presenting information in a more readily understandable form is viewed as a legitimate use of signaling. Cash flows are viewed as signals. This study will posit signaling as a maintained hypothesis to explain management's motivation to disclose cash flow information earlier than the effective date of SFAS No. 95.

2.4 INFORMATION VALUE OF CASH FLOWS

The basic premise of the proposed investigation is that managers believe investors respond to cash flow information, just as investors respond to accounting earnings information. Therefore, the same factors which have been identified in the literature as motivating managers to choose accounting methods (see section 2.5) should motivate managers to disclose cash flow information.

A considerable literature exists examining the usefulness of cash flow information. In general, the later of these studies found cash flows to be useful to investors and thus provide support for the premise that managers believe that cash flow information has value to investors. The following four studies are representative of these later studies and have been selected for review in this section: Bowen, Burgstahler and Daley (1986); Bowen, Burgstahler and Daley (1987); Wilson (1987); and Livnat and Zarowin (1990).

Bowen, Burgstahler and Daley (1986) were motivated in part by the findings of earlier studies[2] that cash flow did not possess information beyond that in earnings numbers. Most of the prior studies measured the "information effect" in the same manner as did this study, by measuring the Cumulative Abnormal Return using event-study methodology. They found that "traditional" measures of cash flows used in previous research, such as adding back depreciation to operating net income and using working capital from operations as a measure of cash flow, were highly correlated with operating net

income. In contrast, more sophisticated measures of cash flow (which approximated the definition of cash from operations given in SFAS No. 95) had "dramatically lower" (pg. 719) correlations with operating net income. They concluded that "this suggests a possible explanation for the lack of significant results for the cash flow variable examined in some prior research ... and suggests that new research using other measures of cash flow might yield different results (page 719)."

Bowen, Burgstahler and Daley (1987) examined the association between unexpected security returns and unexpected cash flows, after controlling for the relation between unexpected returns and unexpected earnings. They used a sophisticated measure of cash flow based on Bowen, Burgstahler and Daley (1986) and studies by Largay and Stickney (1980) and Gombola and Ketz (1983). They concluded that cash flows possess incremental information content beyond that of accrual earnings.

Wilson (1987) conducted an investigation into the information value of cash flows that was motivated by the insight that earnings were released to the financial press prior to the release of the annual report, which contained the

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[2]. Such as Ball and Brown (1968). Even a recent study in "Accounting and Business Research," Board and Day (1989), used a simplistic measure of cash flows and concluded that cash flows did not possess added information value.

funds statement and sufficient data to calculate cash flows. He addressed the specific "question of whether the accrual and funds component of earnings have incremental information content beyond earnings itself? (pg. 319)" He concluded in the affirmative when funds are measured as cash from operations.

Livnat and Zarowin (1990) examined the unexpected stock price reaction to unexpected components of cash flows. Expected components were determined by the random-walk model; i.e., changes from the prior year's cash flows constituted the unexpected cash flow measure. This was the measure of unexpected cash flows used by Bowen, Burgstahler and Daley (1987) and by Rayburn (1986). Unexpected market returns were measured by the market model, using a twelve-month event window, again comparable to Bowen, Burgstahler and Daley (1987) and to Rayburn (1986). Actual amounts of cash flows were determined by manipulation of reported income numbers, funds statement numbers and balance sheet numbers. The cash flows thus generated were essentially in the three-part format of SFAS No. 95. They concluded that operating cash flows are strongly associated with security returns, that financing cash flows are associated with security returns, although the association is more sensitive to the time period examined and not as significant as that of operating cash flows, and that investing cash flows do not exhibit a significant association with security returns.

Livnat and Zarowin (1990) performed several tests of the

robustness of their results. They split their sample into above-and-below median firms in terms of market value of equity. Their results were similar for the two groups. They also varied the measure of expected cash flows from the random-walk model to the use of prior cumulative abnormal returns, following the process used by Beaver, Lambert and Morse (1980) and by Collins, Kothari and Rayburn (1987). In this test, they also used quintiles based on market value to control for a size effect, following Collins, Kothari and Rayburn (1987). Their results were robust to this specification of unexpected cash flows and control for size effect. They also tested for a third specification of unexpected cash flows, that of Lipe (1986), in which each component change of cash flows in year T is predicted by using all changes in the components of cash flows in year T-1. Their results were robust to this specification of unexpected cash flows.

Summary

Examinations of the information content of cash flows have been conducted using the same methodology as that used to examine the information content of accounting net income. The results have supported the proposition that investors value cash flow information in the same manner as they value accounting net income information. Managers would reasonably expect that investors would react to cash flow information and would consider this reaction in deciding whether to release cash flow information.

2.5 POSITIVE ACCOUNTING THEORY

Positive accounting theory attempts to explain and predict accounting practice [Watts and Zimmerman (1986)]. This purpose of positive accounting theory is maintained throughout the literature. Numerous studies use expressions such as "as predicted by positive accounting theory." The primary question addressed by positive accounting theory is "How do accounting standards affect management's wealth? [Watts and Zimmerman (1978), 114]?"

Research conducted using positive accounting theory as a paradigm gives the impression that positive accounting theory can be expressed as "Management acts in its own best (self-serving) interests." Research conducted under this view of positive accounting theory has contributed to the literature by revealing previously unknown empirical regularities, such as the association between leverage and accounting method choice [Watts and Zimmerman (1990)].

Positive accounting theory has been described in terms of what it attempts to do (explain and predict accounting practice) and in terms of three hypotheses: 1) The bonus plan, or compensation hypothesis, 2) The debt/equity, or debt covenant hypothesis, and 3) The size, or political cost hypothesis. The bonus plan, or compensation, hypothesis is based on the assumption that a manager's compensation under a bonus plan increases as reported earnings increase. "Under that assumption, an increase in the present value of a firm's reported earnings increases the present value of the manager's

compensation [Watts and Zimmerman (1986), 208]." The related hypothesis, in alternate form, is:

> **Bonus plan hypothesis.** Ceteris paribus, manager of firms with bonus plans are more likely to choose accounting procedures that shift reported earnings from future periods to the current period [Watts and Zimmerman (1986), 208].

The debt/equity, or debt covenant hypothesis, is based on the assumption that "A default on a debt contract is costly, so contracts that define a breach in terms of accounting numbers provide managers with incentives to choose accounting numbers that reduce the probability of a breach [Watts and Zimmerman (1968), 215]." The related hypothesis, in alternate form, is:

> **Debt/equity hypothesis.** Ceteris paribus, the larger a firm's debt/equity ratio, the more likely the firm's manager is to select accounting procedures that shift reported earnings from future periods to the current period [Watts and Zimmerman (1986), 216].

The size, or political cost hypothesis, is based on the assumption that "large firms are more politically sensitive than small firms and, therefore, face differential incentives in their choice of accounting procedures [Watts and Zimmerman (1986), 235]." Size is used as a proxy for sensitivity to political costs of regulation and taxation. The related hypothesis, in alternate form, is:

> **Size hypothesis.** Ceteris paribus, the larger the firm, the more likely the manager is to choose accounting procedures that defer reported earnings from current to future periods [Watts and Zimmerman (1986), 235].

This study will draw on the research conducted on the above three hypotheses, which have been confirmed over a variety of studies, and on a fourth empirical regularity, the observed

difference in the behavior of managers in firms with concentrated ownership compared to the behavior of managers in firms with more diffuse ownership, to generate hypotheses for the motivation of managers to disclose cash flows earlier than the effective date of SFAS No. 95.

Presented here is an item not found in the literature: a definition of positive accounting theory that is self-contained. Existing literature consistently makes reference to "the positive accounting theory" but no definition exists; rather, the purpose of positive accounting theory (to explain and predict accounting practice) is given, followed by one or more of the hypotheses concerning management's behavior. The following definition is drawn from Watts and Zimmerman (1986, pgs. 134 - 137): Positive accounting theory is that accounting choices are made to generate an Efficient Set of accounting methods for the firm. An Efficient Set is that set which minimizes the firm's contracting costs. Contracting costs are defined broadly and not yet completely identified. While they include agency costs of debt and equity, they also include 1) **External transactions costs**, such as underwriting costs of new debt issues, 2) **Internal transactions costs,** such as the cost of maintaining a transfer price system, 3) **Political process transactions costs**, such as lobbying to avoid government regulation, 4) **Information-gathering costs**, 5) **Renegotiation costs of contracts**, and 6) **Bankruptcy costs.** The theory is firm-specific. That is, the relative magnitudes of the various contracting costs vary from firm to

firm.

Positive accounting theory could be viewed as an extension of the seminal work by Jensen and Meckling (1976) entitled "Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure." This paper was motivated by progress in the theory of (1) property rights, (2) agency and (3) finance and developed a theory of ownership structure for the firm. That theory of ownership structure can be stated as follows: The firm's optional ownership structure is that structure that minimizes agency costs. Agency costs arise whenever one or more persons (the principal(s)) engage another person (the agent) to perform some service and delegate some authority to the agent. The agent may not always act in the best interests of the principal. Agency costs are defined as the sum of (1) the monitoring expenditures by the principal, (2) the bonding expenditures by the agent, and (3) the residual loss. The residual loss is defined as the difference between the agent's decisions and those which would maximize the welfare of the principal.

Ball and Smith (1992) prefer the terminology "the economic consequences literature" to the terminology "the positive accounting literature." Both Ball and Smith (1992) and Watts and Zimmerman (1978) trace the foundations of the literature to Coase (1937), which established the proposition that firms owe their existence to costs of contracting, and to Jensen and Meckling (1976), which established the principal/agent analysis of motivation for managers' actions.

The literature review that follows is organized by hypothesis.

2.51 BONUS OR COMPENSATION HYPOTHESIS

Watts and Zimmerman (1978) defined management compensation very broadly; including wages, bonuses, stock options, and nonpecuniary income, including perquisites (pg. 114). The literature has focused almost exclusively on bonuses, which are based on accounting income and thus appear to be related directly to accounting choices that affect income. Examinations in which the existence of management bonus plans was used as a dichotomous variable (0 = the firm had no bonus plan; 1 = the firm had a bonus plan) were conducted in the period between Watts and Zimmerman (1978) and Healy (1985). The results were mixed. Zmijewski and Hagerman (1981), in a search for the existence of an overall income strategy consisting of simultaneous choices of accounting methods of depreciation, inventory costing, the investment tax credit and the amortization of pension costs found that a bonus plan was significant in explaining some choices but not significant in explaining others. Bowen et al. (1981) investigated the significance of a bonus plan in explaining management's choice of expensing or capitalizing interest during the construction period of fixed assets. They based their investigation on the period before Statement of Financial Accounting Standards No. 34, entitled "Capitalization of Interest Cost" (SFAS No. 34) [FASB (1979)] required the capitalization of interest during the construction period of fixed assets. They found that fifty-

one percent of the firms in their sample capitalized interest, and concluded that firms with bonus plans were no more likely to capitalize interest than firms without bonus plans. In determining whether a company had a bonus plan or not, they interpreted the absence of a clear statement that a plan existed to mean that a plan did not exist. Abdel-Khalik (1985) conducted an examination of the effects of the change from FIFO to LIFO on managerial compensation. He found that managers' compensation did not decline for the firms that switched from FIFO to LIFO. He interpreted this finding to mean that either the terms of the bonus plan were modified, or that the bonus plan continued to be based on FIFO income.

Healy (1985) appears to have changed the formulation of hypotheses concerning management compensation. Healy quoted a study made by Fox (1980) that in 1980 ninety percent of the 1,000 largest U.S. manufacturing corporations used a bonus plan based on accounting earnings to remunerate managers. Further, even if a company has no formal bonus plan, managers might believe justifiably that their compensation is related to firm performance as measured by accounting numbers. Therefore, the use of a dichotomous (0/1) variable to represent compensation effects was too simplistic to yield meaningful results. Healy examined the bonus contracts for 94 companies and found that a common arrangement was the use of a bonus pool and earnings targets. If the "lower bound" earnings target was met, the firm would contribute to a bonus pool, but only up to a specified maximum. This meant that in

practice there existed an "upper bound" for income, beyond which additional earnings did not add to the bonus pool. Healy's tests lead him to conclude that "Managers are more likely to choose income-decreasing accruals when their bonus plan upper or lower bounds are binding, and income-increasing accruals when these bounds are not binding (pg. 106)."

Since Healy (1985), the use of dichotomous variable as a proxy for management compensation effects has been modified. A common modification is the assumption that any increase in firm income leads to an increase in compensation, as developed in Ayres (1986). Another modification is found in Chester (1991), who used a dichotomous variable for the existence of a bonus plan but added a dichotomous variable for the modification/non-modification of the bonus plan for changes in accounting procedures. Data on the existence and details of the plans were obtained directly from the companies in his sample, which was part of a study of corporate management support for push down accounting. An exception to the change in this hypothesis following Healy (1985) is Moses (1987), part of the income-smoothing literature, that initially was submitted for publication prior to Healy (1985).

Ayres (1986) studied early and late adopters of Statement of Financial Accounting Standards No. 52, entitled "Foreign Currency Translation" (SFAS No. 52) [FASB (1981)]. She quoted a survey of 980 large industrial companies that examined the relation between the percentage change in firms' bonuses and the percentage change in firms' return on

investment. The survey showed that a modest (0-5%) increase in profitability was associated with a large (35.5%) increase in bonuses, while profitability increases in excess of 10% led to only slight incremental increases in bonuses (pg. 147). Ayres interpreted this finding to suggest that management has an incentive to increase earnings, but not by a large amount. She hypothesized that firms that elected to adopt SFAS No. 52, which was an income-increasing choice in 102 and 103 cases, had a smaller percentage growth in earnings **before** the effect of SFAS No. 52 than did those firms which delayed adoption of SFAS No. 52. This hypothesis was confirmed at the .002 level of significance in a logistical model.

Trombley (1989) examined the characteristics of firms electing early adoption of Statement of Financial Accounting Standards No. 86, entitled "Accounting for the Costs of Computer Software to Be Sold, Leased, or Otherwise Marketed" (SFAS No. 86) [FASB (1985)], which required capitalization of software development costs for firms in the software industry. As a proxy for management compensation effects, he used a dichotomous variable for the **change** in earnings from the prior year before the effects of SFAS No. 86. Specifically, he used 1 for a decrease in earnings or increase in loss, and 0 for an increase in earnings or decrease in loss. This variable was found significant in an Ordinary Least Squares (OLS) regression model at the .05 level.

Stock Options

A rise in the value of a firm's common stock can

contribute to the compensation of the firm's managers [Watts and Zimmerman (1978)]. Johnson and Revsine (1988) state that "A factor that mitigates accounting related incentive conflicts between manager and stockholders is the prevalence of executive compensation arrangements that link managerial wealth to shareholder value through stock options or direct share ownership (pg. 96)." Ronen and Aharoni (1989) reported that responses to questionnaires mailed as part of their study of the effects of corporate tax on management's choice of accounting procedures indicated that management compensation is linked to both accounting earnings and stock prices through incentive plans. The questionnaires related to compensation plans in effect in the fiscal year ended December 31, 1979 and were mailed to the **Fortune 1,000** companies. Of the 202 responding companies, 13 reported an option plan only, 37 a bonus plan only, 142 a mixed bonus-option plan, and 10 neither a bonus nor an option plan. That is, 77% (155 out of 202) reported the use of either an option plan exclusively or the use of a mixture of option and bonus plans to compensate managers.

DeChow and Sloan (1991) considered options in an examination of the behavior of Chief Executive Officers (CEOs) in their final year with the firm. They hypothesized that CEOs would reduce discretionary spending (specifically on research and development [R&D]) in their final years, in order to increase their income-based bonuses. Their findings confirmed this hypothesis, but the reduction in R&D

expenditures in the CEO's final year was mitigated by the CEO's equity interest in the firm, which might be adversely affected by inadequate spending on R&D (pg. 78).

DeChow and Sloan (1991) measured the degree of equity interest of a CEO in the firm by a computation of the relative importance of the CEO's equity interest to the CEO's non-equity interest (salary plus bonus). Their measure of equity interest included stock options. The measure of equity interest was shares of stock owned plus 60% of stock options owned, both stock and options multiplied by stock price. Relative importance was determined by dividing equity ownership by salary plus bonus. They derived the 60% adjustment factor for stock options from simulation evidence discussed in Jensen and Murphy (1990) as a control for the smaller dollar change in the value of a stock option for a given dollar change in the value of the underlying stock.

Summary

Management compensation effects have been found significant in explaining management's choice of accounting procedures. The studies testing this effect have focused on the increase in management's compensation due to any increase in reported accounting income, assuming that virtually all firms have bonus plans that are tied to reported accounting earnings, explicitly or implicitly. The proposed study is an examination of early versus late adoption of SFAS No. 95, which is not a choice that affects reported accounting income. However, managers are hypothesized to view disclosures as

signaling devices and to believe that investors will interpret cash flow information in the same manner that they interpret accounting income information. Favorable information has been show to raise share prices. An increase in share prices is part of the bonus hypothesis of Watts and Zimmerman (1978). The effect of share price on manager's compensation has not been investigated extensively, but preliminary results are positive. This study will hypothesize that managers will adopt SFAS No. 95 early if they believe the disclosure will be viewed favorably. A direct measure (number of stock options owned) of the effect on manager's compensation due to an increase in share price will be incorporated into the model.

2.52 DEBT COVENANT HYPOTHESIS

Debt agreements often contain restrictive covenants designed to limit wealth transfers between debt and equity holders [Jensen and Meckling (1976), Watts and Zimmerman (1978)].

Common limitations include limits on the long-term debt to total assets ratio and limits on the interest coverage ratio. Dividend payments are restricted also to the pool of unrestricted retained earnings. A number of accounting choice studies have hypothesized that the existence of debt constraints influences management's choice of discretionary accounting procedures.

The extent of leverage has been found to be a significant variable in models that predict management's choice of accounting procedures. The significance of the interest

coverage ratio and the ratio of dividends to the pool of unrestricted retained earnings (dividend constraints) both have been supported, but not as consistently as the extent of leverage.

Bowen, Noreen and Lacey (1981) used leverage, interest coverage and dividend constraints as explanatory variables in an examination of the corporate decision to capitalize interest. They were found significant at the .028, .089 and .045 levels, respectively. Lilien and Pastena (1982) used leverage to proxy for debt constraints in a study of accounting procedures of oil and gas producers and found leverage to be significant at the .18 level. Daley and Vigeland (1983) investigated the effects of debt covenants on management's choice of accounting for research and development costs and found that leverage and dividend constraints were significant in explaining the choice but that interest coverage was not.

Ayres (1986) studied early and late adopters of SFAS No. 52. Leverage was not hypothesized to affect management's choice of adoption date because the direction of the impact from the adoption of SFAS No. 52 was ambiguous. Although the earnings effect was positive, the effect on net assets depended upon the relation between historical and current exchange rates and a company's mix of monetary and non-monetary assets. Ayres controlled for leverage by splitting her sample into high and low leverage groups, hypothesizing that interest coverage was more important to a firm with high

leverage. Interest coverage (controlled for leverage) and dividend constraints were used as proxies for debt constraints. Interest coverage was found significant at the .0325 level for the low-leveraged firms and was found significant at the .007 level for the highly-leveraged firms. Dividend constraints were found significant at the .0014 level.

Johnson and Ramanan (1988) investigated firms in the oil and gas industry that changed their accounting method from successful efforts to the full cost basis in the period 1970 - 76. This change affected reporting accounting income. They concluded that leverage and the level of exploration activity were significant variables, and that the year of the change was associated with concurrent increases in debt financing and exploration activity.

Healy and Palepu (1990) presented evidence that the debt covenants influence management's behavior, but not as predicted by positive accounting theory. They conducted an investigation of the effectiveness of accounting-based debt constraints and concluded that such constraints are significant influences on management's behavior, but that management's behavioral response is to reduce the level of dividends rather than to increase accounting income through discretionary accounting changes.

Press and Weintrop (1990) investigated the propriety of leverage as a surrogate for the restrictiveness of constraints in debt agreements. They examined the provisions of the

actual debt agreements to determine nearness to the constraint levels. They replicated Zmijewski and Hagerman's (1981) income strategy test, with the addition of a leverage constraint indicator determined from the actual debt agreements. They found both their leverage constraint indicator and leverage to be significant in explaining accounting choices. They concluded that leverage proxies for factors in addition to accounting-based debt constraints.

Press and Weintrop (1990) computed the Spearman rank correlations between the measures of leverage used in Lilien and Pastena (1982), Lys (1984), Bowen et al. (1981), Zmijewski and Hagerman (1981), Collins et al. (1981), Johnson and Ramanan (1988) and Chow (1982) to four measures of "actual" nearness to debt constraints. They found that the market value measures were more highly correlated to the measures of "actual" constraints than were the other measures (pg. 80). An examination of their Table 4, page 78 reveals that Lys' definition and Chow's definition perform equally well and superior to the other measures. Lys' definition is the simpler of the two, and will be employed in the proposed study.

Public versus private debt

The contracting costs associated with public debt are considered to be higher than those associated with private debt [Leftwich (1981)]. The difference is due to the higher costs of renegotiation [Smith and Warner (1979)]. The trustee of a public bond issue cannot renegotiate the terms of the

indenture without the approval of the bondholders. Usually two-thirds of the bondholders must agree to the revised terms [Smith and Warner (1979), 151]. Private debt can be renegotiated relatively simply.

Daley and Vigeland (1983) investigated the effects of debt covenants on management's choice of accounting for research and development expenses. They developed a model to explain the choice which incorporated measures for both public debt and private debt. They reported that both the public debt and the private debt variables were positive and significant at the .05 level. As predicted, the public debt variable coefficient was larger, but the difference between public and private debt was not significant at the .10 level (pg. 204).

Summary

Debt covenant constraints have been found significant in explaining management's choice of acccunting procedures that affect earnings, assets, and the earnings available for dividends. The proposed study is an examination of choice of adoption date of SFAS No. 95, which does not affect earnings, assets or the earnings available for dividends. However, cash flows are hypothesized to act as signals that influence investors' perceptions of a firm's risk class. This study will hypothesize that managers of firms will be influenced in their decision of adoption date of SFAS No. 95 by the existence of debt covenant constraints. Lys' (1984) measure of leverage will be used as a proxy for debt covenant

constraints. In addition, the model developed to predict manager's choice of adoption date of SFAS No. 95 will incorporate measures both of public debt and of private debt, because the contracting costs associated with these types of debt vary significantly.

2.53 SIZE (POLITICAL COST) HYPOTHESIS

Watts and Zimmerman (1978) argued that larger firms were more sensitive to political costs such as regulation, anti-trust legislation, and excess profits taxes. Therefore, larger firms were hypothesized to elect income-decreasing accounting methods in an effort to avoid the attention of politicians and regulatory agencies. Many studies have hypothesized size to have an effect on the object of study.

The following five studies are representative of those studies which hypothesized size to be a proxy for political costs and found the proxy to be significant: (1) Blacconiere, Bowen, Sefcik and Stinson (1991), which was an examination of the factors influencing management's voluntary adoption of Regulatory Accounting Principles in the Savings and Loan industry; (2) Ayres (1986), which was an examination of the factors influencing management's choice of adoption date of SFAS No. 52; (3) Daley and Vigeland (1983), which was an examination of the factors influencing management's choice of accounting treatment for research and development costs; (4) Lilien and Pastena (1982), which was an examination of the factors influencing management's choices of the specific procedures used in applying either the full cost or the

successful efforts method before these procedures were specified by the Securities and Exchange Commission in Accounting Series Release No. 258; and (5) Zmijewski and Hagerman (1981), which was an investigation of the existence of an overall income strategy by management that consisted of simultaneous choices of accounting methods for depreciation, inventory costing, the investment tax credit, and amortization of pension costs. In each of these studies, political costs appeared to override management compensation (bonus) effects in that larger companies tended to chose income-decreasing strategies.

This was not the result found in Bowen, Noreen and Lacey (1981), a study of the factors influencing management's choice of accounting treatment given interest costs during construction (in the time period before capitalization was required by SFAS No. 34). This study showed that larger companies in the petroleum industry adopted capitalization, as the political costs hypothesis suggested. However, these findings were unique to the petroleum industry. Large companies in other industries were no more likely to choose capitalization than they were to choose expensing.

Trombley (1989) found size to be significant, but not because of the political costs hypothesis. He studied the factors influencing the choice of adoption date of SFAS No. 86, which required capitalization of software development costs by companies in the software industry. None of the companies appeared large enough to attract political

attention. "The results of this study show that the size effect persists even in a sample of small firms, suggesting that size reflects factors other than political costs (pg. 530)." One alternative hypothesis advanced by Trombley was the argument of Ataise (1985) that information dissemination is less complete for smaller firms in part because there are fewer analysts and institutional investors following smaller firms.

Bamber (1987) investigated the relation between firm size and trading volume around the announcement of quarterly earnings. She found that after controlling for unexpected earnings, firm size is related inversely to trading volume. She theorized that this was due to the higher volume of pre-disclosure information that was available for the larger firms; the "unexpected earnings" are anticipated by more investors for the larger firms.

Cushing and LeClere (1992) examined the factors influencing management's choice of FIFO versus LIFO inventory procedures. They theorized that size could be a proxy for the higher bookkeeping costs associated with the LIFO method. If larger companies exhibit economies of scale in their accounting departments, the added bookkeeping costs for LIFO would be less of a concern for these companies than for smaller firms. This was confirmed by the results of a survey asking managers which items were of concern to them in selecting an inventory method. "The firms of the 21 FIFO respondents citing concern about LIFO bookkeeping costs had

significantly lower average net sales than other FIFO firms (pg. 362)."

Chow and Wong-Boren (1987) investigated the factors that might motivate Mexican firms to voluntarily disclose information. Size was found to be a significant factor favoring disclosure. They hypothesized agency costs as an explanation. That is, as argued in Jensen & Meckling (1976), disclosures tend to reduce agency costs and the effect of agency costs is higher for larger companies because larger companies tend to have more outside capital. Chow (1982) investigated the characteristics of firms that elected external audits in 1926, before the Securities and Exchange Commission mandated external audits for large public companies. Size and debt covenants were found significant. Neither of these studies were concerned with management's choice of procedures that affect reported accounting earnings.

Wong (1988) investigated the factors that influence the placement within the financial statements of New Zealand companies of the New Zealand export tax credit. The New Zealand Income Tax Act of 1976 provided "export market development and tourist promotion incentive" credits of 67.5% of qualified expenditures and allowed "export performance incentive" tax credits of from 1.4% to 11.9%, depending on New Zealand content, of the sales price of exported goods. The credits were offset against the income tax otherwise payable, and any unabsorbed credit was refundable to the taxpayer. Two methods were allowed in reporting the tax credits in the

income statement: as a reduction of income tax expense or as an increase in sales. A financial statement user would calculate a different effective income tax rate for the firm dependent upon the placement of the tax credit.

The political climate in New Zealand was such that public attention was drawn to companies' effective tax rate. "Intra-period accounting numbers have no impact of the 'bottom line' (i.e., net income) or on asset and liability numbers, but they affect components of the net income number which, in turn, could have economic consequences (pg. 37)." Wong hypothesized that political pressures would lead larger companies to elect the increase in sales method. This hypothesis was confirmed. Wong further hypothesized that companies that are nearer to their interest coverage ratio constraints would be more likely to use the increase in sales method. This hypothesis also was confirmed.

Summary

Size has been shown to be a significant factor influencing management's choice of accounting procedures that affect income. In addition, size has been shown to influence management's choices of placement within the financial statements of items that do not affect income. Size also has been shown to be a significant factor in determining investors' reaction to earnings disclosures, and in influencing management's choice of voluntary disclosures as well.

This study will hypothesize that size has a significant

positive relationship to management's choice of adoption date of SFAS No. 95. This study will not hypothesize political costs to be of significance because politicians are presumed to be influenced by the income numbers reported by the mass media and not by cash flows. However, there may be substantial information production costs associated with adopting cash flow reporting. These costs would be proportionately less for a larger company.

2.54 MANAGEMENT CONTROL (CORPORATE OWNERSHIP) HYPOTHESIS

The concept that the degree of ownership of a firm by its managers influences the accounting and reporting choices of the firm has been traced by Dhaliwal, Salamon and Smith (1982) to Williamson (1984), to Monsen and Downs (1965), to Smith (1976), and to Salamon and Smith (1979). The basic argument is that managers of firms whose ownership is diffuse (management controlled firms) have considerable discretion in guiding the affairs of the firm as contrasted with the discretionary power of managers in firms whose ownership is concentrated (owner controlled firms). In the positive accounting literature, the seminal study is Dhaliwal, Salamon and Smith (1982).

Dhaliwal, Salamon and Smith (1982) integrate the arguments of managerial economists (such as Williamson [1964]) with those of positive accounting theory to generate the prediction that management controlled firms are more likely than owner controlled firms to adopt accounting procedures that increase reported accounting earnings. The theory that

the type of ownership has an impact upon the discretionary accounting choices made by managers is in contrast to the theory in the finance literature [Fama (1980)] that managers always bear the full cost of failing to maximize firm value and thus would be reluctant to elect accounting procedures that did not maximize this value. The finance theory predicts that no difference would be expected in the accounting methods adopted by management controlled and owner controlled firms.

Dhaliwal, Salamon and Smith (1982) undertook this study "to help determine whether the positive theory of Watts and Zimmerman (1978) ... or the theory of Fama (1980) that the market for managerial talent is efficient has the more predictive ability in the context of the problem of accounting method choice (pg. 45)." The study emplcyed the same sample used in Smith (1976): 150 firms drawn at random from those listed in the 1955 U.S. Senate Staff Report entitled "Factors Affecting the Stock Market." This U.S. Senate Staff Report contained essentially all the firms listed on the New York Stock Exchange in December, 1954. Firms were classified as owner controlled if one party owned 10% or more of the voting stock and exercised active control, or if one party owned 20% or more of the voting stock. Active control was defined as service on the board of directors or as an officer. A firm was classified as management controlled if no single block of stock greater than 5% was controlled by any party. The accounting choice examined was the depreciation method (accelerated for both book and taxes, accelerated for taxes

and straight-line for book, and straight-line for both book and taxes). The prediction model was a probit model in which the depreciation choice was the dependent variable and size, leverage and type of corporate ownership were the independent variables. The entire probit model was significant at the .01 level and the corporate ownership variable was significant at the .03 level (pg. 51).

Following the publication of Dhaliwal, Salamon and Smith (1982), several positive accounting studies have included a variable for corporate ownership. Ayres (1986) examined the factors affecting management's choice of adoption date of SFAS No. 52. As a proxy for corporate ownership, she used the percentage of common stock owned by officers and directors as a group. She found it to be significant at the .023 level.

Trombley (1989) investigated the factors influencing management's choice of adoption date of SFAS No. 86. He used the same proxy measure of corporate ownership as did Ayres (1986). He did not find corporate ownership to be a significant variable; however, he believed that this might be due partly to its high correlation (significant at the .01 level) with size.

Ruland, Tung and George (1990) investigated the factors associated with the voluntary disclosure of management's forecasts of earnings. They defined corporate ownership as did Ayres (1986). Corporate ownership was found significant at the .001 level in a probit model developing the probability of the voluntary disclosure of earnings by management. They

also found that the release of a forecast of earnings was significantly (.028 level) associated with the raising of new capital by the forecasting firm. The issuance of new stock or new debt within three months of the release of the forecast was a dichotomous variable in their model. Data on new capital offerings was obtained from **The Directory of Corporate Financing.**

Other studies in which the degree of corporate ownership by management was found significant include Dunne (1990), which defined corporate ownership as did Ayres (1986); Dyl (1989), which defined corporate ownership as the percentage of stock owned by the single largest stockholder; and Adbel-Khalik (1985), which defined corporate ownership as did Dhaliwal, Salamon and Smith (1982).

Niehaus (1989) investigated management's choice of FIFO or LIFO inventory costing. He used percentage of ownership to develop ownership concentration ratios. He used the **Fortune 500 Corporate Data Exchange Stock Ownership Directory**, which lists the percentage of common shares, by name of owner, for any party that holds more than 0.2% of the firm's outstanding shares. He matched the owners with the names of the officers and directors of the firms in his sample and classified any owner who was not an officer or director as being an "outsider." He included a variable for "outside ownership concentration", consisting of the percentage of stock owned by the five largest outside holders, in a logit model. The logit model also included a measure of managerial (or insider)

ownership concentration constructed in similar fashion, along with measures of size and leverage.

Niehaus (1989) observed a "range effect." His results suggested that LIFO was more likely to be chosen when managerial ownership is very high or very low, and that FIFO is more likely to be chosen when managerial ownership is in the middle-ranges. He concluded that this "range effect" explained why Hunt (1985) found that the likelihood of LIFO was related inversely to managerial ownership. In the low range, Hunt (1985) was confirmed; in the high range, Hunt (1985) was contradicted (pg. 281).

Summary

In general, the hypothesis that the behavior of managers in firms in which ownership is diffuse differs from that of managers in firms with more concentrated ownership has been supported. In addition, there is some support for the concept that the issuance of new capital shortly after the adoption of a new accounting procedure is associated with management's choice of that accounting procedure.

The proposed study is an investigation of the factors influencing management's choice of adoption date of SFAS No. 95. The release of information concerning cash flows has been viewed as a signal. The proposed study will hypothesize that management will be motivated to adopt SFAS No. 95 early if they anticipate the issuance of new capital shortly after the adoption. The influence of the degree of management control on management's choice of adoption date of SFAS No. 95 is a

complex issue, the resolution of which constitutes a major contribution of the proposed study. The hypothesized relation between the degree of management control and management's choice of adoption date of SFAS No. 95 will be explored in depth in Chapter Three.

2.6 AUDITOR EFFECTS ON MANAGEMENT'S CHOICES

One explanation for observed accounting and disclosure choices, particularly where management is essentially indifferent about the choice, is the preferences of other participants in the financial reporting process. Trombley (1989) found that the position taken by a firm's auditors in lobbying the FASB concerning SFAS No. 86 while it was in the exposure draft period was related to the firm's choice of adoption date of SFAS No. 86. Kinney and McDaniel (1989) found that the firm's outside auditor had an influence upon the firm's likelihood of correcting previously reported quarterly earnings. The proposed study will hypothesize that the firm's outside auditor has an effect upon the firm's choice of adoption date of SFAS No. 95.

2.7 CONCLUSION

This Chapter has examined authoritative pronouncements and published research to establish that the information contained in a statement of cash flows is considered highly relevant to present and potential investors, creditors and other users in making rational investment, credit and similar decisions. The literature reviewed in this Chapter leads to the conclusion that disclosures by management are valued

signals of their superior knowledge of the firm's future prospects. The positive accounting literature was reviewed specifically because that literature is rich in variables that have been demonstrated to influence management's choices of accounting and disclosures.

The review of all the research and authoritative pronouncements in this chapter leads to the identification of the following factors that should be expected to influence management's choice of adoption date of SFAS No. 95:

1. The belief by managers that they have "good news" to report.

2. The existence of a compensation scheme that rewards managers for any increases in the firm's stock price.

3. The existence of debt, both public and private, in the firm's capital structure, and the related tightness of the debt covenant constraints.

4. The relative ease with which the firm can assemble cash flow information.

5. The degree of autonomy given managers in exercising their discretionary powers.

6. The firm's outside auditor.

Operationalization of these measures, the development of specific hypotheses, and the development of a model to explain and predict management's choice of adoption date of SFAS No. 95 will be explained in Chapter Three.

Chapter Three

Development of Model and Statement of Hypotheses

In late 1981 both the FASB and the FEI encouraged firms to change the focus of their funds statements from working capital to cash basis, and to experiment with the classification of funds into operating, financing and investing categories. As shown in Table 1, a number of firms switched the focus of their funds statement from working capital to cash in 1981. The effective date of SFAS No. 95 was fiscal years ending on or after July 15, 1988. Firms were encouraged to adopt SFAS No. 95 earlier than the effective date and to restate the previous year to conform to SFAS No. 95 [FASB (1987) para. 34]. Although there are significant format, classificational and (possibly) definitional differences (see Exhibits 1 and 2) between a funds statement prepared on the cash basis and a cash flow statement prepared in accordance with SFAS No. 95, the overwhelming difference is the emphasis on cash rather than working capital. Details of the sample selected for examination and of the statistical methods to be employed are given in sections 3.9 and 3.10 of this Chapter.

Previous research has established that managers will disclose information if they believe that it will cause an increase in the firm's share price, and that investors react to cash flow information in the same manner as they react to earnings information. The positive accounting literature

documents several factors that have been shown to influence manager's choices of accounting procedures and of disclosures. This chapter will identify those factors which should be expected to influence management's choice of adoption date of SFAS No. 95 and develop a model to explain and predict this choice.

The idea that the possessor of superior information will signal what he knows to achieve some economic benefit has been studied by a number of researchers in a variety of institutional settings. For example, Verrecchia (1983) argued that a manager will decide what information to disclose on the basis of his estimate of the effect of the signal on the price of the firm's stock. Akerlof (1970) introduced the concept that signaling occurs to alter the risk class of product markets. Ross (1977) states that what is valued in the financial marketplace is not the actual risk class of the firm, but the **perceived** risk class of the firm, and that a firm may issue a signal that alters its perceived risk class but not its actual risk class.

A number of researchers have concluded that investors react to cash flow information as well as to earnings information. For example, Bowen et al. (1987), Wilson (1987), and Livnat and Zarowin (1990) each conducted tests of the market's reaction to cash flow and earnings information and concluded that the market valued the information in cash flows in addition to the information in accounting earnings reports. This study posits that managers view the disclosure of cash

flow information as the issuing of a signal.

3.1 BONUS OR COMPENSATION HYPOTHESIS

The hypothesis that managers whose compensation depends in part on bonuses based on accounting net income will tend to select income-increasing alternatives was proposed by Watts and Zimmerman (1978). Healy (1985) showed that virtually all managers received compensation that was in some part related to the firm's earnings. Since Healy (1985), a number of studies (e.g., Ayres [1986], Trombley [1989]) have operationalized the bonus hypothesis by measuring the increase in firm's net income that is due to the object under investigation. This study will operationalize the bonus hypothesis in a like manner. The measure will be that of "good news," which has been shown to motivate managers to make disclosures [Lev and Penman (1990)]. The measure will be the percentage change in cash flows over the two-year period ending with the adoption date. Including two years' changes takes into account the standard two-year comparative format in published financial statements. The first hypothesis, stated in alternative form, is:

H_{a1}: Firms electing early adoption of SFAS No. 95 will have increased cash flow from operations in the two-year period ending with the year of adoption compared to late-adopting firms.

Cash flow from operations (CFO) will be defined as in Bowen, Burgstahler and Daley (1987). They examined several definitions of CFO and found that naive definitions

(e.g., net operating income plus depreciation) were more highly correlated to working capital from operations than to more sophisticated measures of CFO. Their examination was motivated by the failure of studies of the information effect of CFO, where CFO was defined in a naive manner, to detect an incremental information value of CFO. Numbers are references to COMPUSTAT line items.

That is:

$$CFO = WCFO - \Delta REC - \Delta INV - \Delta OCA + \Delta AP + \Delta TP + \Delta OCL$$

where:

WCFO = Working capital from operations (#110)

Δ REC = change in accounts receivable during the period (#2)

Δ INV = change in inventories during the period (#3)

Δ OCA = change in other current assets during the period (#68)

Δ AP = change in accounts payable during the period (#70)

Δ TP = change in taxes payable during the period (#71), and

Δ OCL = change in other current liabilities during the period (#72)

3.2 DEBT COVENANT HYPOTHESIS

The use of restrictive covenants in debt agreements to reduce management's ability to create wealth transfers between debt and equity holders has been recognized for some time [Jensen and Meckling (1976), Watts and Zimmerman (1978)]. Common covenants include limits on the long-term debt to total assets ratio and limits on the interest coverage ratio. The extent of leverage, as a proxy for the existence of and nearness to the constraint levels of debt agreements, has been found to be a significant variable in models that predict management's choice of accounting procedures [e.g., Bowen et al. (1981), Johnson and Ramanan (1988)].

Press and Weintrop (1990) investigated the propriety of leverage as a surrogate for the restrictiveness of debt constraints by examining the provisions of the actual debt agreements. They computed the Spearman rank correlations between the measures of leverage used in seven studies to four measures of "actual" nearness to debt constraints. They concluded that the definition used in Lys (1984) and in Chow (1982) performed equally well and superior to the other measures. Lys' (1984) definition is the simpler of the two. Applying the principle that where two measures perform equally well, the simpler of the two is the preferred measure, this study will define leverage as did Lys (1984).

The contracting costs associated with public debt are considered to be higher than those associated with private debt [Leftwich (1981), Smith and Warner (1979)]. The

difference is due to the higher costs of renegotiation of the public debt [Smith and Warner (1979)]. Accordingly, this study will include leverage measures of both public debt and of private debt. Determination of the classification of the debt will be made by the examination of proxy statements, Form 10-K's or other public documents.

Previous studies have hypothesized that the nearer a company is to violating a debt covenant, the more likely they are to choose accounting procedures that will increase net income and total assets. The decision to disclose cash flow information does not affect net income or total assets. However, payments on debt are made in cash, not on claims on net income. Further, disclosing information has been shown [Ross (1977)] to alter investors' perceptions of a firm's risk class. Therefore, management should be motivated to disclose cash flow information the nearer they are to violating a debt covenant agreement, if the percentage change in cash flows over the preceding two-year period constitutes "good news." The hypotheses related to debt covenants, stated in the alternative form, are stated in terms of a multiplicative variable of recent change in cash flows times nearness to debt covenant constraints, as follows:

H_{a2}: Firms electing early adoption of SFAS No. 95 will have higher levels of public debt leverage and a more favorable change in CFO over the two-year period ending with the adoption date compared to late-adopting firms.

H_{a3}: Firms electing early adoption of SFAS No. 95 will have higher levels of private debt leverage and a more favorable change in CFO in the two-year period ending with the adoption date compared to late-adopting firms.

The measure of leverage will be that used by Lys (1984). The numbers in parentheses are COMPUSTAT line items:

$$\text{Leverage} = \frac{\text{Book value of long-term debt}}{\text{Market value of equity [(\#24) times (\#25)]}} \quad (1)$$

(COMPUSTAT line item #24 is "number of shares of common stock" and line item #25 is "market value per share.")
The book value of long-term private debt and long-term public debt will be determined from proxy statements.

3.3 SIZE HYPOTHESIS

Size has been found to be a significant determinate of management's choice of accounting procedures that affect income [e.g., Blacconiere et al. (1991), Ayres (1986), Zmijewski and Hagerman (1981)]. Size also has been shown to influence management's choice of placement within the financial statements of items that do not affect income [Wong (1988)], to be a significant factor in determining investors' reactions to quarterly earnings disclosures [Bamber (1987)] and to be a significant determinate of management's choice of voluntary disclosures [Chow and Wong-Boren (1987)]. One of the hypothesized reasons for the influence of size on management's voluntary disclosures is the existence of information production costs [Cushing and LeClere (1992)].

The decision to adopt SFAS No. 95 early carries with it

significant information production costs, in no small part because of the preference of the FASB for restating the prior year to conform to the new presentation in comparative financial statements. Larger companies may have larger accounting staffs or may experience economies of scale such that the relative importance of the added costs of adopting SFAS No. 95 early is of less importance to larger firms. This leads to the fourth hypothesis, stated in the alternative form:

H_{a4}: Firms electing early adoption of SFAS No. 95 will be larger compared to late-adopting firms.

Size has been measured in a variety of ways by different researchers (see Table 3). The most frequently used measures are assets (at book value, COMPUSTAT item # 120) and sales (COMPUSTAT item # 12). This study will incorporate each of these two measures in two separate prediction models.

3.4 MANAGEMENT CONTROL HYPOTHESIS

A number of studies have shown that the degree of ownership of a firm by its managers influences the accounting choices [e.g., Dhaliwal et al. (1982), Ayres (1986)] and disclosure choices [Ruland et al. (1989)] of the firm. The basic argument is that managers of firms whose ownership is diffuse (management controlled firms) have considerable discretion in guiding the affairs of the firm compared to the discretionary power of managers in firms whose ownership is concentrated (owner controlled firms). Studies of managers' choice of accounting procedures generally hypothesize that

managers tend to choose the procedure that maximizes their income-based bonuses, if management has a high degree of control.

Watts and Zimmerman (1990) state that "When managers exercise this discretion it can be because (1) the exercised discretion increases the wealth of all contracting parties, or (2) the exercised discretion makes the manager better off at the expense of some other contracting party or parties (pg. 135)." The first action is said to be acting "efficiently," and the second action is said to be acting "opportunistically."

Virtually all studies of accounting choice have assumed that managers have acted opportunistically. (As a result, positive accounting theory is viewed by most researchers as simply a theory of management's self-interest rather than as an economic theory of maximization of firm value, the view held by Watts and Zimmerman).

Hypothesis number one states that managers will react to "good news" by publicizing it; specifically, by adopting SFAS No. 95 early. This action by management would be expected in all situations where the recent change in CFO constitutes "good news" if managers act for the benefit of all parties (i.e., act efficiently), regardless of management's ability to benefit directly from the disclosure of "good news." However, if managers are motivated only by self-interest (i.e, act opportunistically) they will release "good news" only if the disclosure will be to their personal benefit.

To strengthen the ability of this study to investigate this area, a measure of benefit to managers from an increase in share price is needed. The number of shares held by officers and directors is such a measure, as well as being an accepted measure [e.g., this is the measure used in Ayres (1986), Trombley (1989), Ruland et al. (1990) and Dunne (1990) of the degree of management control of the firm]. This study will add an additional measure, ownership of stock options, of the direct benefit to a manager of an increase in the firm's share price.

The percentage of the firm's outstanding shares owned by officers and directors and the number of options held will be taken from proxy statements. The end-of-period share price also will be taken from proxy statements. The measure of stock options that will enter the prediction model will be 60% of the share price multiplied by the number of options, following the procedure used by Dechow and Sloan (1991) to control for the smaller dollar change in the value of a stock option for a given dollar change in the value of the underlying stock. This discussion leads to hypotheses five and six, which are stated in the null form, as opportunistic behavior by managers is not assumed in this study:

H_{05}: There will be no difference in the degree of management control between firms that elect early adoption of SFAS No. 95 compared to late-adopting firms.

H_{06}: There will be no difference in the value of management's stock options between firms electing

early adoption of SFAS No. 95 compared to late-adopting firms.

3.5 NEW CAPITAL ISSUANCE HYPOTHESIS

The voluntary disclosure of information may be related to new capital offerings by the firm. The addition of stock or debt to the firm's capital structure increases agency costs [Jensen & Meckling (1976)], and additional disclosures reduce agency costs [Ruland et al. (1990)]. New capital offerings shortly after the release of voluntary earnings forecasts by management were found to be a significant factor in explaining management's voluntary disclosure of the forecasts [Ruland et al. (1990)]. This leads to the seventh hypothesis, stated in the alternative form:

H_{a7}: Firms electing early adoption of SFAS No. 95 will be more likely to raise new capital in the year following the adoption year compared to late-adopting firms.

Ruland et al. (1990) used the three-month period following the release of the forecast as the relevant period to apply the search for new capital offerings. They stated that they would have preferred a longer period but that a longer period would have contaminated their study by including the release of the actual earnings report in the period. One year appears reasonable, and allows the proxy statement for the year following the adoption as a source of data regarding new capital issuances.

3.6 AUDITOR EFFECT HYPOTHESIS

One explanation for observed accounting and disclosure choices, particularly where management is essentially

indifferent about the choice, is the preferences of other participants in the financial reporting process. Researchers [e.g., Trombley (1990), Kinney and McDaniel (1989)] have observed a relationship between the firm's outside auditor and the firm's accounting or disclosure choices. It is reasonable to expect that a "Big Six" auditing firm would be more likely to encourage its clients to adopt the reporting requirements early when compared to a smaller auditing firm, in part because of the extensive educational programs regarding the latest FASB pronouncements conducted in-house in the larger auditing firms. This leads to the eighth hypothesis, stated in the alternative form:

> H_{a8}: Firms electing early adoption of SFAS No. 95 will be more likely to have engaged a Big Six auditing firm compared to late-adopting firms.

Data regarding the auditor in the year of adoption will be taken from the proxy statements.

3.7 CONSISTENCY HYPOTHESIS

The decision to adopt SFAS No. 95 earlier than the effective date of fiscal years ending on or after July 15, 1988 carries with it the acceleration of bookkeeping and auditing costs which otherwise could be postponed until a later year. Firms that have previously switched the emphasis of their funds statement from working capital to cash have already incurred the bulk of these costs, and should be expected to adopt SFAS No. 95 with fewer added costs than those firms that maintained the working capital basis for their funds statement. This reasoning leads to the ninth

hypothesis, stated in the alternative form:

H_{a9}: Firms electing early adoption of SFAS No. 95 will be more likely to have used the cash basis for their funds statement in the year preceding adoption of SFAS No. 95 compared to late-adopting firms.

The nomenclature "consistency hypothesis" is drawn from Lilien and Pastena (1982) who used similar reasoning to hypothesize that bookkeeping and other costs would influence management's choice of accounting procedures in the oil and gas industry.

3.8 THE PREDICTION MODEL

The following model will be used in a logistic regression to estimate the likelihood of early adoption of SFAS No. 95 by a firm. The reasons for using a logistic regression instead of an ordinary least squares (OLS) or discriminant regression, and the selection of a sample, as well as the need for any univariate statistics, will be developed in Sections 3.9 and 3.10 of this Chapter.

The model is:

$$\begin{aligned}\text{Probability of early adoption of SFAS No. 95} = {} & a + b_1\,\Delta CFO + b_2\,PUBLEV\,(\Delta\,CFO) \\ & + b_3\,PRILEV\,(\Delta\,CFO) + b_4\,SIZE + b_5\,MC \\ & + b_6\,OPTIONS + b_7\,NEWCAP + b_8\,AUDITOR \\ & + b_9\,PRIOR\end{aligned}$$

where:

Δ CFO = Percentage change in CFO over the two-year period ending with the adoption date

PUBLEV = Degree of public leverage

PRILEV = Degree of private leverage

SIZE = Size

MC	=	Degree of management control
OPTIONS	=	Value of management's options
NEWCAP	=	New capital issuances within one year
AUDITOR	=	Type of auditor in adoption year, and
PRIOR	=	Emphasis of funds statement in year prior to adoption year

CFO, PUBLEV, PRILEV, MC and OPTIONS are as defined in previous sections of this Chapter. Size will be measured in two ways: sales (net sales), and book value of total assets. Sales will be used in the first iteration; book value of total assets in the second. NEWCAP is a dichotomous variable where 1 = new capital was issued and 0 = new capital was not issued. AUDITOR is a dichotomous variable where 1 = the auditor was one of the "Big Six" and 0 = the auditor was not one of the "Big Six." PRIOR is a dichotomous variable where 1 = cash was the emphasis of the funds statement in the year prior to adoption of SFAS No. 95 and 0 = working capital was the basis of the funds statement in the year prior to adoption of SFAS No. 95.

All coefficients are predicted to be positive except b_5 (degree of management control) and b_6 (value of management's options). No prediction is made regarding these; the interpretation of their coefficients and significance is a major contribution of this study. Additionally, b_2 (public leverage) is predicted to be greater than b_3 (private leverage). Predicted signs of the regression coefficients are shown in Table 4.

3.9 SAMPLE SELECTION

The results of a review of **Accounting Trends and Techniques** [AICPA (1977-90)] are shown in Table 1. The earliest year in which a significant number of firms adopted the title "Cash Flows" for their funds statement is 1987, when 90 firms adopted this nomenclature. The research sample will consist of these 90 firms plus other firms drawn at random which adopted SFAS No. 95 in their financial statements for fiscal years ending in 1987. The objective will be to obtain a usable sample of 109 firms or more.

Aldrich and Nelson (1984, pg. 53) state that a Logit sample size on the order of N-K= 100 should yield a reasonable approximation of the results of large sample sizes. Sample sizes used in selected other studies are shown in Table 5.

Random control group vs. Matched pairs

The use of a random control group admits into the research the possibility that the results are driven by omitted variables [Daley and Vigeland (1983)]. For example, if certain firm characteristics such as the optimal leverage ratio vary with industry, the power of a test designed to test for the effect of leverage on a firm's decisions will be strengthened if the control group is constructed by matching on industry, rather than being chosen at random. However, this matching may limit the variation of other explanatory variables, thus reducing their power to discriminate [Daley and Vigeland (1983)].

Some positive accounting researchers [e.g., Ruland et

al. (1990)] have constructed control groups matched on industry by matching on four, three, or two digit Standard Industrial Codes (SIC codes). Others [e.g., Ayres (1986)] have constructed random control groups and presented details of the test results based on comparison of the effects group to the random control group. Details of the industry composition of the effects group and the control group (by SIC code) were presented in tabular form. They also constructed a control group consisting of firms matched by industry and presented only the highlights of the second test. Other [e.g., Hunt (1985)] have omitted a common variable, size, from the independent variables in the prediction equation but constructed a control group based on size (and on industry by SIC code).

In order to maximize the power of the model proposed in this study, the use of a random control group is proposed. As did Ayres (1986), details of the industry composition of the effects firms and of the control firms (by SIC code) will be presented in tabular form. A second control group consisting of firms matched by four or three digit SIC codes will be constructed and the test run a second time. Significant differences in the results of the two tests will be highlighted.

3.10 STATISTICAL METHODS EMPLOYED

Univariate tests

The Wilcoxon rank sum test of differences between means will be used to test whether those firms that adopted SFAS No.

95 early were drawn from the same population as those that did not. The Wilcoxon rank sum test is a non-parametric test that can be used without making the assumptions that the observations are normally distributed and have equal variances [Canavos (1984)]. In addition, another popular non-parametric test, the Kolmogorov-Smirnov test, will be run and the differences between it and the Wilcoxon test will be noted.

Multivariate test

A multivariate logistic regression provides an estimate of the explanatory ability of each of the independent variables in the prediction equation, if severe multicollinearity between the independent variables is not present. A test of multi-collinearity will be performed and the final regression model will omit independent variables that are highly ($R^2 > .80$) [Lee and Hsieh (1985)] correlated. The test of multi-collinearity will be to regress each of the independent variables on all other independent variables, as done in Daley and Vigeland (1983).

The multivariate regression model of choice when the dependent variable is dichotomous and the explanatory variables are not normally distributed is Logit [Maddala (1991)]. Both Logit and a related model, Probit, were designed to overcome the violation of the homoskedasticity assumption of the error terms in OLS regression models which occurs when the dependent variable is dichotomous, as is the case here. Logit assumes that the dependent variable is an estimate of the probability that an observation belongs in one

of two groups. Logit assumes that the probability density function describing the relation between the dependent and independent variables is logistic rather than normal and is described by the relation $Y_i^* = \Sigma\, b_k x_{ik} + u_i$ where Y^* represents the latent (i.e., unobservable) preference for an alternative [Aldrich and Nelson (1984)]. Recent choice studies [e.g., Ayres (1986)] have employed Logit.

3.11 EVALUATION OF THE LOGIT MODEL AND USE OF JACKKNIFE PROCEDURE

In order to evaluate the significance of the overall logit model, a pseudo-R^2 measure will be developed, the interpretation of which is analogous to that of the R^2 in an OLS regression model. Also, a jackknife procedure will be used. A jackknife procedure is one in which each observation is treated as a hold-out sample and an estimate of the probability of the dependent variable is made using all the other observations.

3.12 SUMMARY

The test of the predictive ability of a model that explains management's choice of adoption date of SFAS No. 95 will be accomplished by use of a logistical regression procedure. In addition to that multivariate procedure, the non-parametric Wilcoxon and Kolmogorov-Smirnov tests will be used to determine differences between the sample and control means of the independent variables in the model. A test of multicollinearity will be performed and the final regression model will not contain variables for which collinearity is a problem.

The primary results will be based on a comparison of firms that adopted SFAS No. 95 early to a random sample of firms that did not. A second test will be conducted using a control group matched on SIC codes to the sample group. Significant differences between the second and first tests will be reported.

Chapter Four

Analysis of Results

This Chapter presents the results of the data collection and statistical analyses. The sample selection process is explained first. Then the results of the univariate and multivariate procedures are presented and analyzed. The Chapter ends with conclusions and a final comment regarding the sample.

4.1 SAMPLE SELECTION

Based on a review of **Accounting Trends and Techniques** [AICPA (1977-90)] as shown in Table 1, the earliest year in which a significant number of firms adopted the title "Cash Flows" for their funds statement is 1987, when 90 firms adopted this nomenclature. These 90 firms plus additional firms drawn at random which used cash as the basis of their funds or cash flow statement in the fiscal year ending in 1987 formed the sample for this study, subject to the following conditions: (1) The proxy statements for these firms, as quoted in the **COMPAC DISCLOSURE CD-ROM** data base, had to provide the number of shares owned by officers and directors, and (2) Annual reports for these firms for the fiscal years ending in 1986, 1987 and 1988 had to be available in the Cabell Library of Virginia Commonwealth University. These conditions had no significant impact on the elements in the sample. The objective was to obtain a usable sample of 109 or more firms, as Aldrich and Nelson (1984, pg. 53) state that a

Logit sample size on the order of N-K=100 should yield a reasonable approximation of the results of large sample sizes. A sample of 218 firms was obtained, 109 of which used cash as the basis of their funds or cash flow statement for the fiscal year ending in 1987 (Early Adopters) and 109 of which used working capital as the basis of their funds or cash flow statement in the fiscal year ending in 1987 (Control Group). The composition of the sample is given in the Exhibit 3. The sample does not include firms in regulated industries or financial institutions, as their freedom to make disclosure decisions is limited compared to other firms [Daley and Vigeland (1983)]. The most well represented industry is medium and heavy manufacturing (SIC codes in the 3000's) with 64 firms in the 218-firm sample. The second and third most well represented industries are light manufacturing (SIC codes in the 2000's) with 48 firms and wholesale and retail trade (SIC codes in the 5000's) with 30 firms in the sample.

Table 6 provides a descriptive summary of the variables used in the study. Extreme observations were noted for 9 of the 218 observations for the single variable of percentage change in cash flow from operations (CFO). To attempt to minimize the effect of these 9 extreme observations, the percentage change in CFO was coded as 999.9% or -999.9% even though the observed change in CFO exceeded a 1000% change. This limiting procedure is taken from [Ayres (1986)] in which a similar procedure was followed.

Industry Control

Of the total sample of 218 firms, 112 were matched on 3 and 4-digit SIC codes; 56 Early Adopters and 56 in a Control Group. Statistical analyses were run twice; once for all 218 firms and once for only the 112 firms matched on 3 and 4-digit SIC codes. This procedure follows Daley and Vigeland (1983) who state that the use of an industry-matched control group strengthens the power of a test of certain firm characteristics if these characteristics (such as leverage) tend to vary by industry, while the use of a more random control group strengthens the power of the test of firm characteristics for which industry-matching may limit variation. Tables 7 and 8 provide descriptive summaries of the variables used in this study on a basis of an industry-matched sample and a more random sample.

4.2 RESULTS OF THE UNIVARIATE TESTS

Non-parametric tests of the differences between means were used to test whether those firms that adopted SFAS No. 95 early were drawn from the same population as those that did not. Non-parametric tests can be used without making the assumptions that the observations are normally distributed and have equal variances [Canavos (1984)]. The results of two popular non-parametric tests are reported in Tables 9 and 10: the Wilcoxon rank sum test, and the Kolmogorov-Smirnov (K-S) test.

Presentation of Results

The Wilcoxon rank sum test applied to the total sample of

218 firms (Table 9) shows that four variables are highly significant: Size (whether measured by sales or by assets) (SIZE) (.0001), value of management's options (OPTIONS) (.0001), the basis (cash or working capital) of the funds statement used in the preceding fiscal year (PRIOR) (.0001), and the degree of management control (MC) (.0006). The K-S test also shows that SIZE (whether measured by sales or by assets), OPTIONS, PRIOR and MC are significant at .0015 or better. The other variables are not significant at a level of .10 or better.

An examination of the industry-matched companies (Table 10) shows that SIZE (whether measured by sales or by assets), OPTIONS, MC and PRIOR remain highly significant, all being significant at the .0013 level or better. The change in CFO moves to a marginally significant level (.1032) when controlled for industry and measured by the Wilcoxon test. The other variables remain insignificant in the industry-matched sample.

Discussion of Results

H_1 predicts that firms electing early adoption of SFAS No. 95 will have increased CFO in the two-year period ending with the year of adoption, compared to late-adopting firms. The reasoning is that an increase in CFO is a measure of "good news," which has been shown to motivate managers to make disclosures [Lev and Penman (1990)]. The experimental results do not confirm this hypothesis. Rather, firms disclosing CFO in 1987 have a lower two-year change in CFO than those that

maintain the disclosure of working capital.

H_2 predicts that firms electing early adoption of SFAS No. 95 will have higher levels of public debt leverage (PUBLEV) and a more favorable change in CFO over the two-year period ending with the adoption date, compared to late-adopting firms. The reasoning is that higher leverage implies more risk of violation of a debt covenant agreement; if a firm has high leverage and a favorable change in CFO, managers will be motivated to disclose the favorable change in CFO. The variable PUBLEV is multiplicative with the variable change in CFO, if change in CFO is positive. The experimental results do not support this hypothesis because PUBLEV does not achieve significance at a level of .10 or better on either an industry-matched or full-sample basis.

H_3 is concerned with the degree of private leverage (PRILEV) and the adoption date of SFAS No. 95. The prediction and reasoning is the same for PRILEV as for PUBLEV. However, PRILEV is predicted to be less significant in the choice of adoption date of SFAS No. 95 than PUBLEV because PRILEV is easier to renegotiate. The experimental results do not support this hypothesis because PRILEV does not achieve significance at a level of .10 or better on either an industry-matched or full-sample basis.

H_4 predicts that firms electing early adoption of SFAS No. 95 will be larger compared to late-adopting firms. The reasoning is that larger companies may experience economies of scale such that the relative importance of the added costs of

adopting SFAS No. 95 early is of less importance to the larger firms. This SIZE hypothesis is strongly (.0018 level or better) supported by both the Wilcoxon and K-S tests on both the industry-matched and full samples and whether SIZE is measured by sales or by assets.

H_5 is concerned with the degree of management control (MC) of the firms. H_5 is stated in the null form: there is no difference in MC between early and late-adopting firms.

H_6 is concerned with the value of management's stock options (OPTIONS). H_6 is also stated in the null form, predicting no difference in OPTIONS between early and late-adopting firms. H_5 and H_6 are both rejected by the experimental results. Both MC and OPTIONS are highly (.0015 or better) significant for the full 218-member sample whether significance is measured by the Wilcoxon or K-S tests. The results are virtually unchanged for the 112-member industry-matched sample.

The experimental results concerning MC and OPTIONS were to be evaluated to uncover evidence regarding the "efficiency" or "opportunism" of management's actions. If managers release "good news" in all cases, thus raising share prices for all concerned, they are said to be acting "efficiently." If they release "good news" only when they stand to profit personally from the presumed rise in share prices (as measured by OPTIONS) they are said to be acting "opportunistically." No clear conclusions can be reached regarding "efficient" or "opportunistic" behavior on the part of managers. A major

problem in reaching a conclusion in this area is the lack of strong significance of the "good news" or change in CFO measure. If the lack of significance of the change in CFO is ignored, the experimental results may be interpreted as providing evidence in favor of the "efficient" behavior of managers. In both the entire sample and the industry-matched sample, MC is higher for the late-adopters while OPTIONS is higher for the early adopters. However, OPTIONS and SIZE are significantly positively correlated (.0001 level; see Tables 11 and 12) and SIZE is a significant predictor of early adoption. Therefore, OPTIONS may be acting as a surrogate for SIZE.

H_7 predicts that early adopters will be more likely to raise new capital in the year following the adoption year, compared to late-adopting firms. The reasoning is that additional disclosures reduce agency costs associated with the issuance of additional debt or equity. This hypothesis is not supported by the experimental results on either an industry-matched or a full-sample basis.

H_8 predicts that early adopters will be more likely to have used the services of a Big Six auditing firm, compared to late-adopters. This hypothesis is not supported by the experimental results on either an industry-matched or a full-sample basis. Interestingly, none of the 218 firms in the sample experienced a switch of auditing firms in the years 1986, 1987 or 1988.

H_9 predicts that firms electing early adoption of SFAS

No. 95 will be more likely to have used cash as the basis of their funds statement for the year preceding adoption of SFAS No. 95, compared to late-adopting firms. The reasoning is that the bookkeeping costs associated with adoption of SFAS No. 95 will be less for a firm that already prepares its funds statement on a cash basis. This hypothesis is highly supported by the experimental results. The significance level of PRIOR is .0001 whether tested by the Wilcoxon or K-S test on either the entire sample or the industry-matched sample.

Conclusion

The experimental results of univariate tests support the significance of size, whether measured by sales or by assets, the degree of management control, the value of management's options and the basis of the prior year's funds statement in the choice of adoption date of SFAS No. 95 by management.

4.3 RESULTS OF THE MULTIVARIATE TEST

The logistical regression (Logit) test provides an estimate of the explanatory ability of each of the independent variables in the prediction equation, if severe multicollinearity between the independent variables is not present, and is the method of choice in the present situation, where the dependent variable is dichotomous [Maddala (1991)]. Using a definition of severe multicollinearity of $R^2 > .80$ [Lee and Hsieh (1985)], all that is necessary is not to have both size measures (sales and assets) present in the same regression equation. The correlation coefficients are given in Tables 11 and 12.

Presentation of Results

The entire Logit model is highly significant, whether size is measured by sales (Table 13) or by assets. The entire Logit model is significant at the .0001 level and shows a C (test of fit) score of .935. Also, when a jackknife procedure is used, 91% are properly classified, whereas 50% would be the naive probability of success. A jackknife procedure is one in which each observation is treated as a hold-out sample and an estimate of the probability of the dependent variable is made using all the other observations. It is performed by the CTABLE option of the SAS version 6 logistical regression procedure.

However, individual variables tend to be insignificant. Only the type of auditor and the basis of the prior year's funds statement were significant at the .053 level or better in a Logit model of all 218 companies with sales as the size measure (Table 13). To attempt to explore this, the probability measure in the correlation table (Table 11) was used rather than the $R^2 > .80$ rule as a measure of severe multicollinearity and a number of other regressions were run. The more interesting of these are detailed in Table 14. These regressions show the change in CFO and the degree of management control to be more significant, but only at the expense of the overall significance of the model. Interestingly, a model which omits the basis of the prior year's funds statement as a variable shows both the change in CFO and the degree of management control to be significant at

the .0446 level or better while maintaining an overall significance level of .0398. This adds support to the findings of the univariate tests that showed the change in CFO and the degree of management control to be significant factors in explaining management's choice of adoption date of SFAS No. 95.

4.4 CONCLUSIONS

Based on both multivariate and univariate procedures, this study provides evidence that the change in CFO, the size of the firm, the degree of management control, the value of management's options and the basis of the funds statement in the prior year are significant variables that explain management's choice of adoption date of SFAS No. 95.

4.5 COMMENT RE 1987 AS A MEASURE OF "EARLY"

The year 1987, chosen as a measure of early adoption, may not be as "early" as would be implied by the fact that it was the first year that a significant number of companies changed the title of their funds statement from "Statement of Changes in Financial Position" to "Cash Flow Statement." Several instances of cash being used as the basis of the funds statement even though it was entitled "Statement of Changes in Financial Position" were observed. If 1987 is not "early," the importance of the variable "basis of funds statement in prior year" would be exaggerated. Also, the importance of the other variables in the prediction equation may be different from their importance at the time of the true "early"

adoption. For example, the firm's degree of leverage may have changed from the time of the true "early" adoption.

Chapter Five

Summary and Conclusions

The purpose of this study has been to develop a model to explain and predict management's choice of adoption date of Statement of Financial Accounting Standards No. 95, entitled "Statement of Cash Flows" (SFAS No. 95) [FASB (1987)]. Evidence from existing research was cited [e.g., Lev and Penman (1990)] to establish that the release of cash flow information is viewed by management as the release of a signal. Robust hypotheses from the positive accounting literature were tested for their effect on management's choice of adoption date of SFAS No. 95. In addition, the value of management's stock options was tested for its ability to affect this choice.

5.1 SUMMARY

A logistical regression model was developed with a highly significant (.0001) ability to distinguish between early and late adopters of SFAS No. 95. In this model, the explanatory variable of "basis of funds statement used in prior year" overpowered the explanatory ability of the other variables. However, univariate statistical analyses showed that the early and late adopters were drawn from populations which differed significantly in size, in degree of management control, and in the value of management's stock options. In addition, the change in cash flows from operations and the degree of management control are significant at the .05 level in a

logistical regression which omitted the variable "basis of funds statement used in prior year." This Logit model had overall significance at the .04 level.

Size, the degree of management's control and the percentage change in a performance measure are robust hypotheses in positive accounting studies that explain and predict management's choice of accounting methods that affect reported net income. Since these same variables have been found to affect management's choice of adoption date of SFAS No. 95, this study presents evidence that management values and/or believes that investors value cash flows in the same manner that they value accounting net income information. This finding adds to the research concerning the importance of cash flows.

A relatively unexplored variable, the value of management's stock options, was found to influence management's choice of adoption date of SFAS No. 95 (.0001 level; see Tables 9 and 10). Since this study was conducted under the positive accounting theory framework, this study is of value in that it adds to the literature examining the value of management's options, which at present cannot be included in a list of the robust hypotheses of positive accounting. This finding should be of value to the FASB as they prepare an exposure draft of a SFAS in the area of the valuation of employee stock options [FASB (1992)].

5.2 CONTRIBUTIONS OF THE STUDY

The contributions of the study are discussed in this

section, which is organized according to the "Expected Contributions of the Study."

1. Additions to the literature concerning the importance of cash flows. Neill et al. (1991) call for careful research into cash flows and accruals that will "contribute to the emerging literature and our understanding of the economic role of accounting information (pg. 145)." Size, the degree of management's control and the percentage change in a performance measure are robust hypotheses in positive accounting studies (e.g., Zmijewski and Hagerman [1981], Niehaus [1989], Ayres [1986]) that explain and predict management's choice of accounting methods that affect reported net income. Since these same variables have been found (at the .0006 level or better; see Tables 9 and 10) to affect management's choice of adoption date of SFAS No. 95, this study presents evidence that management values and/or believes that investors value cash flows in the same manner that they value accounting net income information. This finding adds to the research concerning the importance of cash flows.

2. Integration of accounting and finance literature. The signaling literature (e.g., Miller and Rock [1985]) is principally in the finance area. This study finds that some of the same variables that affect management's choice of adoption date of SFAS No. 95 are variables that have been found robust in other positive accounting studies concerning income-affecting choices (e.g., Johnson and Ramanan [1988]). Since the decision to disclose cash flows early is not one

that affects income, but is motivated by the same factors as a decision that affects income, the implication is that managers view cash flows as signals of future income flows. This finding integrates the accounting and finance literature.

3. "Efficiency" or "opportunism" of management's actions. A proposed contribution of this study was to provide a direct test of the two different views of management's motivation: efficiency or opportunism. The experimental results concerning the degree of management's control and the value of management's stock options were to be evaluated to uncover evidence regarding the "efficiency" or "opportunism" of management's actions. If managers release "good news" in all cases, thus raising share prices for all concerned, they are said to be acting "efficiently." If they release "good news" only when they stand to profit personally from the presumed rise in share prices (as measured by the value of management's stock options) they are said to be acting "opportunistically."

No clear conclusions can be reached regarding "efficient" or "opportunistic" behavior on the part of managers. A major problem in reaching a conclusion in this area is the lack of strong significance of the "good news" or change in cash flow from operations measure. If the lack of significance of the change in cash flow from operations is ignored, the experimental results may be interpreted as providing evidence in favor of the "efficient" behavior of managers. In both the entire sample and the industry-matched sample, the degree of

management's control is higher for the late-adopters while the value of management's stock options is higher for the early adopters. However, the value of management's stock options and the size of the company (SIZE) are significantly positively correlated (.0001 level; see Tables 11 and 12) and SIZE is a significant predictor of early adoption. Therefore, the value of management's stock options may be acting as a surrogate for SIZE. Subsequent research is needed to discriminate between these two variables.

4. Providing information to authorities. A proposed benefit of this study was to provide information to authoritative and regulatory bodies, such as the FASB and the Securities and Exchange Commission, in proposing new standards or regulations or in evaluating existing standards and regulations. The FASB currently is considering the accounting for employee stock options, with an exposure draft of a SFAS in this area planned for the second quarter of 1993 and a final SFAS planned for 1994 [FASB 1992].

A factor motivating the FASB's deliberations is that existing accounting procedures assign a compensation expense of zero when stock options with an exercise price equal to market are granted. The FASB believes that stock options have a non-zero value. The present study tends to support the FASB's call for a revision in accounting for stock options because the value of management's stock options was found highly significant (.0015 or better) in both the full 218-member sample and the 112-member industry-matched sample,

whether measured by the Wilcoxon or by the K-S test. A copy of this study would make a timely and valued submission to the FASB.

5. Value of information to investors and analysts. It was proposed that any significant information explaining the disclosure choices made by management would be valued by investors and financial analysts, as such information may influence their resource allocation decisions. The present study finds evidence that management values and/or believes that investors value cash flows in the same manner that they value accounting net income information, and that management views the early disclosure of cash flows as the issuing of a signal. These findings may be valued by investors and financial analysts.

6. Investigation of the value of management options. The value of management's options has been explored in a positive study of management choice only by DeChow and Sloan (1991). The value of management's options was found highly significant in this study, thus adding to the positive accounting literature. It may be that this factor will become one of the robust hypotheses of positive accounting.

7. Extension of positive accounting theory into the cash flow area. Because the early disclosure of cash flows is not a choice that affects accounting net income, positive accounting studies involving cash flows have not preceded this study. Since some of the same variables that have proven robust in accounting choice studies are found significant

herein, this study extends the positive theory of accounting choice into the area of cash flows.

5.3 LIMITATIONS OF THE STUDY AND IMPLICATIONS FOR FURTHER RESEARCH

Limitations of the study

The prediction model may have omitted significant explanatory variables. These omitted variables may not be captured by matching on industry SIC Codes. The variables that are used may not be effective proxies for the factors they are attempting to measure. For example, the relative importance of information production costs may not be captured in the variable of firm size. These limitations should be considered in any conclusions drawn from the test results.

Implications for further research

A number of previous studies (e.g., Healy [1985]) have investigated the factors influencing management to adopt a particular accounting method in preference to another. With the exception of DeChow and Sloan (1991) and the current study, the value of management's stock options has not been included as an explanatory variable in the studies. Since this study finds support for the value of management's stock options as an influential variable, a logical implication for further research is the replication of previous accounting choice studies with the value of management's options as a variable (to the degree that options are not a surrogate for size).

Neither the degree of public leverage nor the degree of private leverage were found significant in this study.

Leverage was measured by Lys' (1984) definition, the book value of long-term debt divided by the market value of common equity. This measure was chosen because it and Chow's (1982) definition performed equally well and superior to other measures in a study conducted by Press and Weintrop (1990) investigating the use of surrogates for the "actual" restrictiveness of debt constraints, and it is the simpler of the two measures. Perhaps leverage as measured by Chow's (1982) measure would prove significant. Chow's (1982) measure is the same as Ly's (1984) measure, except that Chow used the sum of the market value of common equity and the book value of long-term debt as the denominator rather than just the market value of common equity. Chow's (1982) measure will yield smaller degrees of leverage than Lys' (1984) measure and the use of it might be considered for an extension of this study.

It was hypothesized that early adopters would be more likely to raise new capital in the year following the adoption year, compared to late-adopting firms. The reasoning was that additional disclosures reduce agency costs associated with the issuance of additional debt or equity. New capital offerings shortly after the release of voluntary earnings forecasts by management were found to be a significant factor in explaining management's voluntary disclosure of the forecasts [Ruland et al. (1990)]. Ruland et al. (1990) used the three-month period following the release of the forecast as the relevant period to apply the search for new capital offerings. They stated that they would have preferred a longer period but that a

longer period would have contaminated their study (which used event-study methodology) by including the release of the actual earnings report in the period. This study used a period of one year, which appeared reasonable and allowed the annual report for the year following the adoption of SFAS No. 95 as a source of data regarding new capital issuances. New capital issuances in the year following the adoption of SFAS No. 95 was not found to be a significant factor in explaining the choice of adoption date. Perhaps one year is too long a period, permitting the issuance of new capital by the firms in this study for reasons unrelated to the adoption of SFAS No. 95. A logical extension of this study would be to explore the issuance of new capital in a period shorter than one year following the adoption of SFAS No. 95. For example, a three-month period could be used with data on new capital offerings obtained from **The Directory of Corporate Financing**, as done by Ruland et al. (1990).

The current study has identified factors which are influential in determining management's choice of the timing of an accounting disclosure (the release of cash flow information; that is, the adoption of SFAS No. 95.) This disclosure does not affect reported net earnings. Several of the factors which have been shown to affect management's choice of accounting procedures that do affect reported net income are shown here to affect disclosure choice. The unique contribution of this study is the extension of the positive accounting theory of choice into the area of non-income-affecting disclosure choices, specifically cash flow disclosure.

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TABLE 1

Number of Firms Reporting Basis of the Funds Statement
and
Title of the Statement of Changes in Financial Position
by year
1977 - 1989

Basis of the Funds Statement

	'86	'85	'84	'83	'82	'81	'80	'79	'78	'77
Working capital	202	220	244	286	346	466	541	549	558	557
Cash	398	380	356	314	254	134	59	51	42	43
	600	600	600	600	600	600	600	600	600	600

Title of 'Changes' Statement

	'89	'88	'87	'86	'85	'84
Cash Flows or Flow	600	540	110	20	1	-
Funds Flow	-	-	7	6	4	4
Chgs in Fin. Position	-	58	477	565	587	590
Other title	-	2	6	9	8	6
	600	600	600	600	600	600

Source: Accounting Trends & Techniques

TABLE 2
Possible Adoption Dates for a Calendar-Year Firm

Date	Significant Event
1988	Cash flow statement required by SFAS No. 95
1987	Cash flow statement encouraged by SFAS No. 95 Cash-basis funds statement encouraged previously
1986	Cash flow statement out in exposure draft form Cash-basis funds statement encouraged previously
1985	Cash-basis funds statement encouraged previously
1984	Cash-basis funds statement encouraged by release of SFAC No. 5 and by results of experimentation encouraged by FEI
1983	Cash-basis funds statement encouraged by exposure draft of SFAC No. 5 and by continuing encouragement of FEI to experiment
1982	Cash-basis funds statement encouraged by continuing encouragement of FEI to experiment
1981	Cash-basis funds statement encouraged by exposure draft of a proposed SFAC and by the FEI's announcement of their encouragement of members to experiment with cash flow reporting
1980	Cash-basis funds statement encouraged by FASB's discussion memorandum
1979 & prior	APBO No. 19 permitted cash-basis funds statements

TABLE 3

Operational Definitions of Firm Size used in Selected Previous Studies

Study	Year	Definition
Watts & Zimmerman	1978	Assets, by rank in Fortune 500 also tested by Sales, by rank in Fortune 500
Bowen, Noreen & Lacey	1981	Sales (two-year average of sales)
Zmijewski & Hagerman	1981	Sales (log of net sales)
Dhaliwal, Salamon & Smith	1982	Assets
Lilien & Pastena	1982	Sales
Ayres	1986	Assets
Chow & Wong-Boren	1987	Book value of debt plus market value of equity
Wong	1988	Sales (log of sales)
Trombley	1989	Sales (log of net sales)
Niehaus	1989	Assets
Ruland, Tung & George	1990	Assets
Press & Weintrop	1990	Sales (log of net sales)

TABLE 4
Explanatory Variables and Hypothesized
Relation to Early Adoption of SFAS No. 95

Variable Name	Variable Definition	Predicted Sign
CFO	Two-year change in cash flows	Positive
PUBLEV	Degree of public leverage times change in cash flows	Positive; > PRILEV
PRILEV	Degree of private leverage times change in cash flows	Positive
SIZE	Size (Assets); Size (Sales)	Positive
MC	Degree of management control.	Not hypothesized
OPTIONS	Value of management's options	Not hypothesized
NEWCAP	New capital issuances	Positive
AUDITOR	Use of "Big Six" auditor	Positive
PRIOR	Basis of funds statement in year prior to adoption	Positive

TABLE 5

Sample Sizes used in Selected Previous Studies

Study	Sample Size
Dhaliwal, Salamon & Smith (1982)	57 management controlled and 53 owner controlled
Healy (1985)	94 firms examined for details of bonus plans
Healy & Palepu (1990)	126 firms which are close to dividend constraints are examined
Press & Weintrop (1990)	83 firms examined for details of debt covenants
Ayres (1986)	103 early adopters 129 late adopters

TABLE 6
SUMMARY STATISTICS ENTIRE 218-MEMBER SAMPLE

VARIABLE*	MEAN	STANDARD DEVIATION	MAXIMUM	MINIMUM
CFO	43.95	258.42	1,000.00	-1.000.00
PUBLEV	2,718.69	16,156.00	179,910.00	0.00
PRILEV	1,894.68	6,846.78	73,629.00	0.00
SIZE (ASSETS)	1,645.81	3,310.00	30,792.00	3.00
SIZE (SALES)	1,444.40	3,030.64	28,209.00	6.00
MC	14.50	16.71	86.30	0.00
OPTIONS	18.72	46.74	416.00	0.00
NEWCAP	.48	.50	1.00	0.00
AUDITOR	.94	.25	1.00	0.00
PRIOR	.42	.49	1.00	0.00

* CFO, PUBLEV, PRILEV and MC are in percentages. PUBLEV and PRILEV are multiplicative with CFO if CFO is positive. SIZE and OPTIONS are in millions.

TABLE 7
SUMMARY STATISTICS SAMPLE NOT MATCHED BY INDUSTRY

Variable*	(1) Early Adopters (N=109) Mean	Max. Min.	Standard Deviation	(2) Control Group (N=109) Mean	Max. Min.	Standard Deviation
CFO	11.1	1,000 -1,000	229.99	76.8	1,000 -789	281.26
PUBLEV	2,788.8	179,910 0	17,757.00	2,648.6	134,025 0	14,463.00
PRILEV	1,800.4	73,629 0	7,652.76	1,988.9	37,465 0	5,967.25
SIZE (ASSETS)	2,164.9	30,792 9	3,925.40	1,127.7	17,768 3	2,461.88
SIZE (SALES	1,980.3	28,209 7	3,697.49	908.5	16,434 6	2,050.24
MC	11.6	86 0	15.74	17.4	83 0	17.23
OPTIONS	22.0	193 0	34.08	15.4	416 0	56.61
NEWCAP	.4495	1 0	.50	.5138	1 0	.50
AUDITOR	.9174	1 0	.27	.9541	1 0	.21
PRIOR	.8257	1 0	.38	.0000	0 0	.09

* CFO, PUBLEV, PRILEV and MC are in percentages. PUBLEV and PRILEV are multiplicative with CFO if CFO is positive. SIZE and OPTIONS are in millions.

TABLE 8
SUMMARY STATISTICS INDUSTRY-MATCHED SAMPLE

Variable*	(1) Early Adopters (N=56) Mean	Max.	Min.	Standard Deviation	(2) Control Group (N=56) Mean	Max.	Min.	Standard Deviation
CFO	16.6	1,000	-1,000	245.31	95.0	1,000	-788	298.79
PUBLEV	1,329.8	36,234	0	5,412.40	4,648.0	134,025	0	19,987.00
PRILEV	2,296.0	73,629	0	9,989.28	1,892.2	37,465	0	5,305.79
SIZE (ASSETS)	2,071.1	30,792	32	4,387.39	1,320.9	17,768	5	3,064.30
SIZE (SALES	1,752.7	28,209	22	3,853.06	1,062.1	16,434	6	2,562.53
MC	10.0	84	0	14.20	17.4	83	0	18.81
OPTIONS	25.0	193	0	39.80	15.2	288	0	53.47
NEWCAP	.9286	1	0	.50	.5000	1	0	.50
AUDITOR	.8929	1	0	.26	.9464	1	0	.23
PRIOR	1.0000	1	0	.31	.0000	0	0	.00

* CFO, PUBLEV, PRILEV and MC are in percentages. PUBLEV and PRILEV are multiplicative with CFO if CFO is positive. SIZE and OPTIONS are in millions.

TABLE 9
NON-PARAMETRIC TESTS OF THE SIGNIFICANCE OF THE VARIABLES
HYPOTHESIZED TO AFFECT ADOPTION DATE OF SFAS NO. 95

(EARLY ADOPTERS AND CONTROL GROUP NOT MATCHED BY INDUSTRY)

Variable	Original Hypothesis	(1) Early Adopters (N=109) Mean	(2) Control Group (N=109) Mean	Significance (one-tail) Wilcoxon Test	Significance (one-tail) Kolmogorov-Smirnov Test	Sample Direction
CFO	1 > 2	11.1	76.8	.1924	.2533	1 < 2
PUBLEV	1 > 2; greater than PRILEV	2,788.8	2,648.6	.2129	.2533	1 > 2; greater than PRILEV
PRILEV	1 > 2	1,800.4	1,988.9	.4068	.7486	1 < 2
SIZE (ASSETS)	1 > 2	2,164.9	1,127.7	.0001*	.0001*	1 > 2
SIZE (SALES)	1 > 2	1,980.3	908.5	.0001*	.0001*	1 > 2
MC	Not Hypothesized	11.6	17.4	.0006*	.0015*	1 < 2
OPTIONS	Not Hypothesized	22.0	15.4	.0001*	.0001*	1 > 2
NEWCAP	1 > 2	.4495	.5138	.3444	.9781	1 < 2
AUDITOR	1 > 2	.9174	.9541	.2713	.9999	1 < 2
PRIOR	1 > 2	.8257	.0000	.0001*	.0001*	1 > 2

* Significant results; if underlined, indicates significant results that support original hypotheses.

TABLE 10
NON-PARAMETRIC TESTS OF THE SIGNIFICANCE OF THE VARIABLES
HYPOTHESIZED TO AFFECT ADOPTION DATE OF SFAS NO. 95

(EARLY ADOPTERS AND CONTROL GROUP MATCHED ON 3 AND 4-DIGIT SIC CODES)

Variable	Original Hypothesis	(1) Early Adopters (N=56) Mean	(2) Control Group (N=56) Mean	Significance (one-tail) Wilcoxon Test	Significance (one-tail) Kolmogorov-Smirnov Test	Sample Direction
CFO	1 > 2	16.6	95.0	.1032	.2301	1 < 2
PUBLEV	1 > 2; greater than PRILEV	1,329.8	4,648.0	.9174	.9048	1 < 2; less than PRILEV
PRILEV	1 > 2	2,296.0	1,892.2	.3389	.1528	1 > 2
SIZE (ASSETS)	1 > 2	2,071.1	1,320.9	.0013*	.0002*	1 > 2
SIZE (SALES)	1 > 2	1,752.7	1,062.1	.0013*	.0002*	1 > 2
MC	Not Hypothesized	10.0	17.4	.0072*	.0061*	1 < 2
OPTIONS	Not Hypothesized	25.0	15.2	.0001*	.0032*	1 > 2
NEWCAP	1 > 2	.9286	.5000	.7090	.9999	1 > 2
AUDITOR	1 > 2	.8929	.9464	.7027	.9999	1 < 2
PRIOR	1 > 2	1.0000	.0000	.0001*	.0001*	1 > 2

* Significant results; if underlined, indicates significant results that support original hypotheses.

TABLE 11
CORRELATION MATRIX OF ALL VARIABLES SHOWING DEGREE OF CORRELATION
(R-SQUARE) AND SIGNIFICANCE LEVEL FOR 218 COMPANIES:
109 EARLY ADOPTERS AND 109 COMPANYS IN RANDOM CONTROL GROUP

	CFO	PUBLEV	PRILEV	SIZE ASSETS	SIZE SALES	MC	OPTIONS	NEWCAP	AUDITOR	PRIOR
CFO	1.00000									
	0.0000									
PUBLEV	0.41819	1.00000								
	0.0001	0.0000								
PRILEV	0.37176	0.22048	1.00000							
	0.0001	0.0195	0.0000							
SIZE-ASSETS	-0.03396	-0.07062	-0.08771	1.00000						
	0.7223	0.4594	0.3578	0.0000						
SIZE-SALES	-0.03939	-0.05186	-0.07716	0.95928	1.00000					
	0.6801	0.5871	0.4187	0.0001	0.0000					
MC	-0.03779	0.09252	0.03015	-0.12352	-0.10594	1.00000				
	0.6924	0.3319	0.7523	0.1945	0.2663	0.0000				
OPTIONS	0.13470	-0.04901	-0.07842	0.66726	0.67435	-0.09450	1.00000			
	0.1568	0.6078	0.4111	0.0001	0.0001	0.3216	0.0000			
NEWCAP	-0.08391	-0.05245	-0.12919	-0.02757	-0.00665	0.08424	0.08050	1.00000		
	0.3790	0.5829	0.1746	0.7729	0.9445	0.3772	0.3988	0.0000		
AUDITOR	0.10618	0.03175	0.06720	0.08409	0.08742	-0.04441	0.08843	0.10150	1.00000	
	0.2652	0.7397	0.4814	0.3781	0.3594	0.6420	0.3538	0.2869	0.0000	
PRIOR	-0.10331	-0.09526	0.03783	0.13602	0.14357	-0.28069	0.11854	-0.07574	0.15767	1.00000
	0.2784	0.3177	0.6921	0.1527	0.1310	0.0027	0.2132	0.4274	0.0969	0.0000

BOLD = R-Square > .80 have been highlighted by printing in bold.
R-Square > .80 is considered high correlation.

TABLE 12
CORRELATION MATRIX OF ALL VARIABLES SHOWING DEGREE OF CORRELATION
(R-SQUARE) AND SIGNIFICANCE LEVEL FOR 112 COMPANIES:
56 EARLY ADOPTERS AND 56 COMPANYS MATCHED ON 3 AND 4-DIGIT SIC CODES

	CFO	PUBLEV	PRILEV	SIZE ASSETS	SIZE SALES	MC	OPTIONS	NEWCAP	AUDITOR	PRIOR
CFO	1.00000 0.0000									
PUBLEV	0.40776 0.0001	1.00000 0.0000								
PRILEV	0.39718 0.0001	0.18286 0.0068	1.00000 0.0000							
SIZE-ASSETS	-0.01663 0.8071	-0.00556 0.9349	-0.06217 0.3609	1.00000 0.0000						
SIZE-SALES	-0.01881 0.7824	-0.04058 0.5512	-0.05640 0.4073	0.92621 0.0001	1.00000 0.0000					
MC	-0.05323 0.4342	0.00231 0.9729	0.05817 0.3927	-0.19293 0.0042	-0.21731 0.0012	1.00000 0.0000				
OPTIONS	0.07214 0.2890	-0.02104 0.7574	-0.07023 0.3019	0.56605 0.0001	0.55235 0.0001	-0.15150 0.0253	1.00000 0.0000			
NEWCAP	-0.02316 0.7338	-0.06604 0.3318	-0.06715 0.3237	0.01559 0.8189	-0.04494 0.5092	0.04893 0.4723	0.05867 0.3807	1.00000 0.0000		
AUDITOR	0.06381 0.3484	0.00025 0.9971	0.02662 0.6959	0.00593 0.9307	0.05654 0.4061	-0.16000 0.0181	0.06420 0.3455	-0.00962 0.8877	1.00000 0.0000	
PRIOR	-0.09983 0.1418	0.02874 0.6731	0.01662 0.8072	0.18801 0.0054	0.16751 0.0133	-0.19188 0.0045	0.09329 0.1699	-0.10854 0.1100	-0.00592 0.9308	1.00000 0.0000

BOLD = R-Square > .80 have been highlighted by printing in bold.
R-Square > .80 is considered high correlation.

TABLE 13
DETAILS OF THE LOGIT REGRESSION MODEL
FOR ENTIRE SAMPLE OF 218 FIRMS
INCLUDING ALL VARIABLES

OVERALL MODEL FIT: Significant at .0001 level, based on chi-square score of 151.274 with 9 degrees of freedom

OVERALL MODEL FIT: Results of "Jackknife" hold-out sample procedure:

Naive success rate: 109 correct out of 218 (50%)
Model's success rate: 198 correct out of 218 (at P = .5000 level)

OVERALL MODEL FIT: C score .935

Significance of individual elements of the model:

Change in CFO	.4560
Public Leverage	.8202
Private Leverage	.8190
Size (Sales)*	.2484
Management Control	.6586
Options Value	.3870
New Capital Issuances	.4018
Type of Auditor	.0530
Basis of Prior Year Funds Statement	.0001

* Results for size measured in assets are essentially unchanged.

TABLE 14
EVALUATION OF SIGNIFICANCE OF
INDIVIDUAL VARIABLES IN THE
OVERALL LOGIT REGRESSION MODEL

VARIATION OF LOGIT PROCEDURE	RESULT
A. STEPWISE (i.e., Forward) Criterion to enter and remain in equation, significant at .3000 (Industry Matched)	No equation. Prior Year entered first. Then Prior Year removed. Procedure terminated.
B. Same as "A", but entire sample of 218 used.	Equation includes only Prior Year as a variable. After prior year, type of auditor was entered, then removed: procedure terminated. Performs virtually as well as entire model.
C. Industry Matched. No leverage measures used. No Prior Year used.	Significance of model drops to .1499. Management control becomes significant at .0293. Change in CFO becomes becomes significant at .0846.
D. Same as "C", but Prior Year measure is included.	Overall significance returns to .0001. Type of auditor becomes significant at .0071. Management control and change in CFO become insignificant.
E. Entire sample of 218 used. Leverage measures included as raw measures, not as multiplicative with change in CFO. No Prior Year measure included.	Overall model is significant at .0398. Management control significant at .0086. Change in CFO significant at .0442. Type of auditor becomes insignificant.

Exhibit 1: Sample Funds Statement (Prior to SFAS No. 95)

Ace Co.
Statement of Changes in Financial Position
for the year ended December 31, 19XX

Sources of working capital:		
From operations:		
Net income		$ 500,000
Add: Charges not requiring use of working capital:		
Depreciation	80,000	
Amortization	20,000	
Deferred income taxes	10,000	
Other	5,000	
	115,000	
Total from operations	615,000	
Sale of property, plant & equipt	100,000	
Increase in long-term debt	200,000	
Total sources	915,000	
Uses of working capital:		
Cash dividends	120,000	
Additions to property, plant & equipt	300,000	
Total uses	420,000	
Increases in working capital		$ 495,000

Increase (Decrease) in Working Capital by Component:

Cash and U.S. Treasury Notes	$ 200,000
Trade accounts receivable	395,000
Inventories	(60,000)
Prepaid expenses and other current assets	40,000
Notes and accounts payable	(80,000)
Current maturities of long-term debt	15,000
Accrued expenses including income taxes	(15,000)
Increase in working capital	$ 495,000

Exhibit 2: Sample Statement of Cash Flow
(Using the direct method preferred by SFAS No. 95)

Ace Co.
Statement of Cash Flow
for the year ended December 31, 19XX

Cash flows from operating activities:		
Cash received from customers	$ 4,000,000	
Cash paid to suppliers and employees	(3,440,000)	
Interest received	10,000	
Interest paid	(150,000)	
Income taxes paid	(100,000)	
Net cash provided by operating activities		$ 320,000
Cash flows from investing activities:		
Proceeds from sale of property, plant & equip	100,000	
Capital expenditures	(300,000)	
Net cash used in investing activities		(200,000)
Cash flows from financing activities:		
Net borrowings long-term	200,000	
Dividends paid	(120,000)	
Net cash provided by financing activities		80,000
Net increase in cash and cash equivalents		200,000
Cash and cash equivalents at beginning of year		600,000
Cash and cash equivalents at end of year		$ 800,000

Reconciliation of net income to net cash provided by operating activities:

Net income		$ 500,000
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation and amortization	$ 100,000	
Increase in trade accounts receivable	(395,000)	
Decrease in inventories	60,000	
Increase in prepaid expenses and other current assets	(40,000)	
Increase in notes and accounts payable	80,000	
Increase in accrued expenses including income taxes	15,000	(180,000)
Net cash provided by operating activities		$ 320,000

Exhibit 3
Composition of the Sample
Showing Company Name, SIC Code
and Degree of Matching on
SIC Code

Working Capital		Degree of Match	Cash	
SIC Code	Company Name		SIC Code	Company Name
1629	Morrison Knudsen Corp.	1	1531	Calton Inc.
1622	Slattery Group Inc.	3	1623	LeMeyers Co Group
1521	AMRE Inc.	4	1521	AMREP Corp.
1311	Ensource Inc.	4	1311	E I Dupont
1311	Avalon Corp.	4	1311	Anadarko Petroleum Corp.
1041	Calahan Mining Corp.	1	1221	Gulf Resources and Chemical Corp.
1041	ATLAS Corp.	2	1021	ASARCC Inc.
2952	ELCOR Corp.	2	2992	Quaker State Corp.
2899	FERRO Corp.	2	2844	Avon Products, Inc.
2895	CABOT Corp.	2	2821	Quantum Chemical Corp.
2869	International Flavors & Fragrances, Inc.	2	2834	General Nutrition Inc.
2851	Grow Group Inc.	4	2851	Desoto Inc.
2851	Standard Brands Paint Co.	4	2851	Insilco Corp.
2834	ICN Pharmaceuticals Inc.	4	2834	Marion Laboratories
2782	John Harland Co.	4	2782	Deluxe Corp.
2761	Ennis Business Forms Inc.	2	2731	McGraw-Hill Inc.
2752	American Business Products Inc.	2	2721	Meredith Corp.
2711	A. H. Belo Corp.	4	2711	Knight-Ridder Inc.
2647	IPCO Corp.	4	2647	Scott Paper Co.
2645	Esselte Business Systems Inc.	3	2648	Dennison Mfg. Corp.
2641	Minnesota Mining & Manufacturing Co.	3	2649	Mead Corp.
2522	Eldon Industries Inc.	1	2621	Great Northern Nekoosa Corp.
2522	G. F. Corp.	1	2911	Tosco Corp.
2451	Skyline Corp.	1	2621	Champion International Corp.
2322	Signal Apparel Co. Inc.	3	2321	Russ Togs, Inc.
2272	Shaw Industries Inc.	2	2211	Springs Industries Inc.
2258	Guilford Mills Inc.	1	2911	Pacific Resources Inc.
2252	Munsingwear	3	2253	Aileen Inc.
2099	Stewart Sandwiches Inc.	2	2051	Interstate Bakeries Corp.
2011	Smithfield Foods Inc.	3	2013	Sara Lee Corp.
2011	IBP. Inc.	2	2051	Ralston Purina
3949	Anthony Industries	3	3944	Mattel Inc.
3824	Daniel Industries	3	3823	General Signal Corp.
3731	American Shipbuilding Co.	2	3761	Allied Signal Inc.

Exhibit 3, page 2 of 3 pages

Working Capital		Degree of Match	Cash	
SIC Code	Company Name		SIC Code	Company Name
3714	DANA Corp.	4	3714	Arvin Industries Inc.
3694	Standard Motor Products Co.	2	3612	Kuhlman Corp.
3675	AVX Corp.	3	3679	Carlisle Companies Inc.
3674	Advanced Micro Devices Inc.	2	3634	Dynamics Corp. of America
3674	AUGAT, Inc.	3	3678	AMP Inc.
3674	International Rectifier Corp.	4	3674	E Systems Inc.
3662	Sparton Corp.	4	3662	AYDIN Corp.
3662	Motorola, Inc.	4	3662	General Instruments Corp.
3651	Emerson Radio Corp.	4	3651	Zenith Electronics Corp.
3585	Fedders Corp.	2	3561	Safeguard Scientifics Inc.
3585	MESTEK, Inc.	4	3585	Standex International Corp.
3573	Genicom Corp.	4	3573	Electronic Associates Inc.
3573	Analog Devices Inc.	4	3573	Floating Point Systems Inc.
3573	Applied Magnetics Corp.	4	3573	Data General Corp.
3573	MAI Basic Four, Inc.	4	3573	Gould Inc.
3569	General Housewares Corp.	3	3561	Trinova Corp.
3564	AMPCO Pittsburgh Corp.	3	3562	Brenco Inc.
3549	Safety Kleen Corp.	3	3545	Acme Cleveland Corp.
3541	Monarch Machine Tool Co.	4	3541	Esterline Corp.
3533	Smith International Inc.	3	3534	Dover Corp.
3533	Presser Industries Inc.	2	3562	Federal-Mogul Corp.
3533	Galveston Houston Co.	3	3531	Caterpillar Inc.
3523	Allied Products Corp.	4	3523	Deere & Co.
3511	Sequa Corp.	3	3519	Brunswick Corp.
3511	McDermott International Corp.	2	3524	Murray Ohio Mfg. Co.
3493	ARX Inc.	2	3443	CBI Industries, Inc.
3356	Armada Corp.	2	3321	Tyler Corp.
3241	Southdown Inc.	4	3241	Giant Group LTD
3149	Suave Shoe Corp.	4	3149	Stride Rite Corp.
4924	South Jersey Industries Inc.	4	4924	Diversified Energies Inc.
4924	Cascade Natural Gas Co.	4	4924	Eastern Gas & Fuel Associates
4924	Equitable Resources Inc.	3	4923	MDU Resources Corp.
4923	Southern Union Co.	4	4923	ARKLA Inc.
4922	Seagull Energy Corp.	3	4923	Sonat Inc.
4722	Southwest Airlines Co.	2	4742	GATX Corp.
4511	Federal Express Corp.	4	4511	Emery Air Freight
4511	Delta Airlines	4	4511	Airborne Freight Corp.
4222	Doughties Foods Inc.	1	4011	Soo Line Corp.

Exhibit 3, page 3 of 3 pages

Working Capital		Degree of Match	Cash	
SIC Code	Company Name		SIC Code	Company Name
4213	Arkansas Best Corp.	1	4000	Canadian Pacific Ltd.
5944	Gordon Jewelry Corp.	2	5912	Melville Corp.
5812	McDonalds Corp.	1	5311	J.C. Penney Company, Inc.
5661	Interco Inc.	2	5651	GAP Inc.
5411	Great A&P Tea Co. Inc.	4	5411	Albertson's Inc.
5331	Family Dollar Stores Inc.	4	5331	F.W. Woolworth
5331	Alexanders, Inc.	2	5331	Dayton Hudson Corp.
5331	AMES Dept. Stores, Inc.	4	5311	Carson Pirie Scott & Co.
5261	General Host Corp.	2	5231	Sherman Wiliams Co.
5159	Dibrell Brothers Inc.	2	5143	MEI Diversified Inc.
5141	Fleming Cos. Inc.	3	5148	Castle & Cooke, Inc.
5111	ALCO Standard Corp.	2	5172	Getty Petroleum Corp.
5065	Anthem Electronics Inc.	2	5088	AAR Corp.
5065	Arrow Electronics Inc.	2	5013	Genuine Parts Co.
5065	Marshall Industries	4	5065	AVNET Inc.
5051	Diversified Industries Inc.	2	5081	AGS Computers Inc.
6794	Entre Computer Center Inc.	1	6512	Southmark Corp.
6794	Diana Corp.	1	6552	General Development Corp.
6531	Grubb & Ellis Co.	2	6552	Deltona Corp.
6411	Frank B. Hall & Co. Inc.	4	6411	Alexander & Alexander Services Inc.
6281	Equitec Financial Group Inc.	1	6331	ITT Corp.
6211	McDonald & Co. Investments Inc.	1	6144	American Hoist & Derrick Co.
7999	San Juan Racing Assoc.	4	7999	Ramada Inc.
7993	Showboat Inc.	1	7832	General Cinema Corp.
7814	Industrial Training Corp.	3	7813	Carolco Pictures Inc.
7349	A.M. Bldg. Maintenance Ind.	2	7394	Enterra Corp.
7311	Foote Cone & Belding Ad Agency	2	7391	Isomet Corp.
7311	Mickel Berry Corp.	2	7321	Dun & Bradstreet Corp.
7311	Inter-Public Group of Co's Inc.	2	7374	Automatic Data Processing Corp.
7261	Service Corp. International	1	7399	Equifax Inc.
7213	Angelica Corp.	1	7392	ERC International
7011	Marriott Corp.	1	7813	MGM United Artists
8999	American Express Co.	4	8999	Ethyl Corp.
8911	Elgin National Industries Inc.	4	8911	Dravo Corp.
8911	Stone & Webster	2	8999	Grumman Corp.
8071	Damon Corp.	1	8711	Talley Industries Inc.
8059	Manor Care Inc.	2	8062	American Medical International Inc.

VITA

James Blair Shelton was born in Baltimore, Maryland, in 1945. He graduated from Wicomico Senior High School in Salisbury, Maryland in 1963, from the University of Maryland in College Park in 1967 (B.S.) and from Virginia Tech in Blacksburg, Virginia in 1975 (Master of Accountancy). He has taught at Virginia Commonwealth University, Radford University, Bluefield State College and Mary Washington College.