Order Number 9009357

The effects of accounting disclosures on bank information environments

Warfield, Terry Dee, Ph.D.

The University of Iowa, 1989

U·M·I
300 N. Zeeb Rd.
Ann Arbor, MI 48106

THE EFFECTS OF ACCOUNTING DISCLOSURES ON BANK INFORMATION ENVIRONMENTS

by

Terry Dee Warfield

A thesis submitted in partial fulfillment
of the requirements for the Doctor of
Philosophy degree in Business Administration
in the Graduate College of
The University of Iowa

August 1989

Thesis supervisor: Assistant Professor Thomas J. Linsmeier

Graduate College
The University of Iowa
Iowa City, Iowa

CERTIFICATE OF APPROVAL

PH.D. THESIS

This is to certify that the Ph.D. thesis of

Terry Dee Warfield

has been approved by the Examining Committee for the thesis requirement for the Doctor of Philosophy degree in Business Administration at the August 1989 graduation.

Thesis committee: Thomas J. Linsmeier
Thesis supervisor

Daniel W. Collins
Member

W. Bruce Johnson
Member

George R. Neumann
Member

Michael Rozeff
Member

To Mary, Andrew, Lauren, and Katie

ACKNOWLEDGEMENTS

I gratefully acknowledge the financial support of the The Department of Accounting at The University of Iowa and The Ernst and Whinney Foundation during this project. Thanks goes to M. Scholes, M. Wolfson and P. Wilson for sharing some of their bank tax and investment portfolio data with me. I would like to thank the members of my committee, Tom Linsmeier (Chair), Dan Collins, Bruce Johnson, George Neumann, and Mike Rozeff for their comments and suggestions on this dissertation. In addition, Tom Carroll, Jere Francis, Rick Tubbs, Susan Watts, Mike Welker and workshop participants at The Universities of Iowa, Notre Dame, Wisconsin, Illinois, and Duke University provided helpful comments on an earlier version of this paper. I have also benefitted from numerous discussions with Sati Bandyopadhyay (Bandy) on this and other projects throughout our doctoral tenure at Iowa. Special thanks is extended to Tom Linsmeier for helpful comments, suggestions and encouragement throughout the dissertation process.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER I

INTRODUCTION

Most prior research concerning the informational usefulness of accounting income has focused on the total net income number.[1] However, a number of accounting researchers have recently examined the informational usefulness of disaggregated income numbers.[2] While these more recent studies have found earnings components to have incremental information content, few have investigated why.[3] This paper extends this recent line of inquiry by exploiting the unique

1. See for example, Beaver, Clarke and Wright (1979) and Brown, Griffin, Hagerman and Zmijewski (1987b) for analyses conducted in association and events contexts, respectively; Lev and Ohlson (1982) provide a comprehensive review of a number of information content studies.

2. These studies have investigated the information content of various income component partitions for relatively broad cross-sections of firms. For example, Wilson (1987) and Rayburn (1986) using event and association designs respectively, investigated the information content of the accrual and funds components of earnings. Hoskin, Hughes, and Ricks (1986) investigated the market reaction to income components and other information released concurrently with annual earnings data and found that even transitory income components may be useful to the market in assessing the valuation implications of earnings signals.

3. Two recent accounting studies have investigated rationale for the information content of earnings components. Neither of these studies investigated the bank income components that are the focus of this paper. Bernard and Stober (1987) investigated possible reasons why the accruals and cash flow components of earnings might be useful to investors and Lipe (1986) found evidence that the differential information content of some income components is related to differential persistence in the components' earnings shocks.

characteristics of the bank reporting environment to investigate why certain bank income components might be useful to bank investors.

The reason why a single industry (banking) analysis is an interesting approach to investigate the general question of the information content of earnings components is suggested by the empirical findings in the extant literature. This evidence suggests that the valuation implications of certain earnings components may depend on contextual factors such as firm operating cycles or macroeconomic conditions.[4] Analyses that do not (or are unable to) incorporate such contextual factors into their empirical models may produce weaker tests of information content if the relevance of these factors varies across time and/or firms in the sample. However, as will be discussed below, the bank setting provides an opportunity to isolate the contextual effects of certain institutional and macroeconomic variables that are predicted to affect the valuation signals provided by certain bank earnings components. Thus, analyses conducted within the bank reporting context may represent relatively more powerful tests of the information content of earnings components

---

4. For example, Bernard and Stober (1987) replicated and extended Wilson's (1987) cash flow/accrual analysis to accounting periods beyond those studied by Wilson. Interestingly, Bernard and Stober were unable to document results similar to Wilson's in the quarters not included in his study. Bernard and Stober suggest that the inconsistent results between the two studies is due to the "highly contextual" nature (across time and firms) of the signals provided by cash flows and accruals about future sales.

as compared to studies that examine earnings components across industries.[5]

The bank income components of particular interest in this study are known as "Income Before Securities Transactions" (IBST hereafter) and "Securities Transactions Gains and Losses" (STGL's hereafter). IBST is the bank income subtotal that includes traditional bank operating revenue and expense items. STGL's are recorded when a bank sells an investment security (part of its asset base) at a price different from its book value.

Interest in these two bank income components is motivated in part by bank reporting practices. Before 1983 banks were required to prepare a "two-step" income statement in which total bank income was explicitly disaggregated into IBST and STGL components. Since 1983, the Securities and Exchange Commission (SEC) has required banks to prepare a more traditional "one-step" income statement to enhance the comparability of bank income statements with those of non-bank entities. See Table 1 for a comparison of these two reporting formats. Note that even within the one-step format STGL's are still

---

5. It should also be noted that the information content analyses in this paper focus on an industry where relatively little empirical evidence exists on the information content of accounting numbers in general, and earnings announcements in particular. Because banks have relatively unique income components and operate in a regulated environment, they have sometimes been excluded from information content studies. For example, to make their samples more homogeneous, both Rayburn (1986) and Wilson (1987) excluded banks from their earnings component tests. The bank papers by Beaver, Eger, Ryan and Wolfson (1986) and Warfield (1988) and those by Foster (1977) for the insurance industry and Bowen (1981) in the utility industry are noteworthy exceptions representing intra-industry studies of the information content of accounting data.

reported as a separate line item, thereby maintaining the component distinctions of interest for this study.[6]

While past bank reporting practices suggest that these component distinctions might be useful to bank statement users, the valuation rationale that would support disaggregated reporting of bank earnings numbers relative to a total earnings measure has yet to be explored. The analysis in this paper suggests alternative valuation rationale for the information content of these bank income components and leads to the interesting prediction that some securities transaction losses provide good news signals about future bank prospects.

More specifically, a cross-sectional valuation model is developed which uses the components of bank income as proxies for future valuation relevant cash flows (Beaver, 1981; Ohlson, 1983). This model provides a framework for addressing questions concerning why the bank income components might be useful to bank investors. For example, because of the many vagaries of the stock and bond markets and due to securities transactions' discretionary nature, one might argue that STGL's are transitory in nature (i.e., have little relevance for predicting future cash flows) compared to the IBST component. In this setting, information on bank income components may

---

6. See SEC (1983a) or Appendix A for a more complete discussion of the format change in bank income statements and the debate surrounding the change. This appendix also reviews the reporting practices of banks and indicates that banks have provided essentially the same income component data after the format change as before. As a result, the statement user can reconstruct one statement format based on the information contained in the alternative format. This evidence suggests that the reporting change should not have affected the informational usefulness of the bank income numbers (Beaver, 1973).

be useful for disentangling the relatively more valuation-relevant IBST signal from the total net income number.

Alternatively, each of the bank income components may signal valuation-relevant information, but each component's relationship to value may be different.[7] That is, disaggregated information on the income components could be useful to investors because of the components' differential implications for predicting future cash flows. These differential valuation implications are especially relevant for the information content of STGL's. As will be discussed below, conditional on contextual factors such as a bank's tax-paying status as well as the direction and magnitude of the spread between market interest rates and bank investment yields, some securities transaction losses are predicted to provide positive valuation signals because they reflect opportunities to invest the divestment proceeds at higher rates of return.[8]

Predictions from the bank income component valuation model are then empirically tested based on traditional capital market tests for the information content of accounting numbers. These tests are conducted in an "events" context and measure the security market reaction to the release of the component data at the earnings announcement date. In brief, the empirical results support the

---

7. Arguments for the alternative valuation signals of the bank income components are developed more fully in Chapter II.

8. Flannery and James (1984) and Tarhan (1987) both document a correlation between interest rate changes and bank stock returns. However, neither of these studies investigated the relationship between interest rates, bank income numbers and security returns.

incremental information content of the earnings components relative to the total income measure. We observe a stronger association between abnormal security returns and unexpected earnings information when total net income is decomposed into IBST and STGL components. In addition, when STGL signals that reflect investment opportunities are isolated from other STGL earnings signals, the results support the incremental information content of the bank earnings components and the unique (inverse) valuation relation for investment opportunity STGL's. In other words, like Bernard and Stober (1987), we find the valuation implications of banks' STGL signals to be highly contextual.[9] These empirical findings support the differential valuation relevence of alternative STGL signals as a primary reason why the IBST/STGL component partition might be useful to bank statement users.[10]

The remainder of the dissertation is organized as follows: Chapter II constitutes the main body of the thesis and Section 1 of

---

9. The study noted above by Beaver et al. (1986) investigated the information content of bank loan disclosures and found STGL's to be insignificant in their cross-sectional valuation model as a control variable (their n. 21). One possible explanation for their insignificant STGL results is that they failed to incorporate the differential valuation effects of the alternative STGL signals in their tests.

10. Differential persistence is an alternative rationale for the differential information content of bank income components (Lipe, 1986). However, empirically comparing the differential persistence of bank income components at the earnings announcement date is difficult because market expectations on the components are not likely to be equally well measured. Complementary research that investigates a persistence rationale for disaggregated reporting is in progress. That study is conducted in a "long window" context where differences in the accuracy of expectations estimates on the IBST and STGL components are less severe.

that chapter provides additional institutional background on bank activities, a description of the alternative signals that are provided by the components of bank income, and the research hypotheses of interest. In Section 2 of Chapter II, a cross-sectional valuation model and a model of security market reaction to earnings announcements are developed. When combined with the discussion in Section 1, these models yield the predictions that will be empirically examined in the tests described in Section 3. Section 4 of Chapter II contains a discussion of the results of these tests. Chapter III concludes the dissertation with an overview of the research findings and possible extensions of this research.

Table 1

Comparison of Bank Income Statement Formats

(From Wachovia Bank's 1983 Annual Report)

Condensed Operating Summary		Two-Step Format	One-Step Format
Net Interest Income after Loan Loss Provision		$ 249,614	$ 249,614
Other Operating Revenue		115,003	115,003
* Securities Losses (before tax reduction of $3,910)		---	(7,941)
Total Other Income		115,003	107,062
Other Expense		240,963	240,963
** Income Before Income Taxes and Securities Transactions		123,654	---
* Income Before Taxes		---	115,713
Applicable Income Taxes		35,041	31,131
** Income Before Securities Transactions	(IBST)	88,613	---
** Securities Gains (Losses) (Net of Taxes: $3,910)	(STGL's)	(4,031)	---
Net Income	(NI)	$ 84,582	$ 84,582

* New Format

** Deleted Under New Rules

CHAPTER II

THE ALTERNATIVE VALUATION SIGNALS OF THE COMPONENTS OF BANK INCOME

1. Background on the Components of Bank Income

The analysis in this paper focuses on possible differential valuation implications of the STGL and IBST bank income components. Accordingly, this section provides institutional background on the bank activities that are reflected in these income components. This discussion is followed by a section describing the valuation signals of the IBST and STGL income components and concludes with a statement of the research hypotheses.

1.1 Bank Activities

The majority of most commercial banks' operating activities are related to their traditional role as financial intermediaries. Banks receive funds from depositors and creditors which are then invested primarily in commercial, real estate, or consumer loans. As indicated by the large percentage of bank assets devoted to these activities (54.2% on average for the sample described in Panel a) of Table 2), they represent the primary investment outlet for bank funds. A bank's return on these activities is a function of the interest spread between rates paid on deposits and borrowed funds and the rates received on loans. Other bank operations include deposit and fiduciary activities (such as trust services) for which the bank

charges service fees. However, these activities are less significant relative to the other operations of the typical bank.[1]

While lending activity is dominant in the operations of the typical bank, bank investment portfolio activities are also important. Banks invest a comparatively large proportion of their asset base in the securities (usually bonds) issued by governmental units or corporations. Interest earned on these investments are recorded as part of IBST. Based on the sample bank data shown in Panel a) of Table 2, banks invest, on average, 17% of their assets in these securities compared to only 3% for the industrial firms in the same period. Additional insight into the types of investment securities held by banks is also contained in the table. Tax-exempt securities (MUNI's) comprise nearly one-half of the banks' investment securities. Almost all of the remainder of the average bank's portfolio of investment securities is in securities issued by the U.S. Treasury or by other agencies of the U.S. government.[2]

A bank's motivation for holding (or divesting) these monetary assets is dependent on a number of factors. Primarily, investment securities provide banks an additional investment opportunity relative to loans. Since loan demand can be dependent on the level of economic activity, investment securities represent an alternative investment

---

1. For banks with Compustat data, total revenue from these activities amounts to just 18.5% of total bank revenues while interest and fees on loans comprise 64% of total bank revenues.

2. Other investments besides federal, state, and municipal bonds (e.g., equity securities or commercial paper) account for 1% of the portfolio on average. In recent years, due in part to changes in the tax code (see discussion below), the proportion of tax-exempt securities in bank investment portfolios has declined.

avenue for bank funds which also reflects differing levels of risk (e.g., from corporate to Treasury securities). Thus, investing in securities can be important for deploying otherwise idle funds at levels of risk consistent with a bank's overall asset management strategy while also providing the bank with an important source of liquidity (see Baughn, Storrs and Walker, 1988).

Beyond the investment opportunity characteristics just discussed, certain institutional and tax code features specific to the banking industry provide further incentives for banks to invest in investment securities. Some governmental units (e.g., states and municipalities) require banks to satisfy pledging requirements in order to secure the deposits of these units. In many cases these requirements are satisfied by holding the debt securities issued by the same governmental unit. In addition, some banks hold municipal bonds as underwriters and/or market makers (Peek and Wilcox, 1986).

Certain tax rules specific to banks are also relevant to a discussion of bank portfolio holdings. The first feature concerns the treatment of gains and losses on the disposal of the securities (STGL's). For tax purposes security transaction gains are treated as ordinary income and securities transaction losses can be deducted from all taxable revenues, not just from capital gains. Of course, securities transaction gains when treated as ordinary income receive a less favorable tax treatment compared to capital gains when the tax rate on ordinary income is higher than the rate on capital gains.[3]

---

3. Under recent tax rules, ordinary and capital gains tax rates are the same (see Gelfand and Hanweck, 1986).

Nonetheless, since the investment disposals that give rise to STGL's are discretionary in nature, this tax feature provides an option that a bank can exercise to reduce its tax liability when holding losses exist on investment securities.

A second feature of the tax code relevant to bank portfolio transactions concerns an incentive for banks to hold tax-exempt securities. Prior to 1983, banks (and some insurance companies) were allowed to deduct the interest expense on debt used to purchase tax-exempt securities.[4] This tax provision essentially grosses up the return on these investments for banks and may be one factor which explains the banks' dominant position in the municipal bond market. For example, banks have historically held 20-30% of all municipal debt issued (Peek and Wilcox (1986), Chart 3).

In 1983 this 100% deduction was reduced to 85% and in recent tax revisions, the interest expense deduction has been eliminated completely.[5] Scholes, Wilson and Wolfson (1988) predict that these changes provided an incentive for banks to reallocate their investment portfolio holdings away from tax-exempt securities (usually municipal bonds) and they provided evidence that banks did shift the "muni-mix" of their portfolios in quarters when the tax code was revised. The

---

4. In practice, this credit is computed by allocating total interest expense to the tax-exempt investments based on the assets' book value proportions.

5. The 1983 changes were due to an adjustment to corporate tax preferences included in the Economic Recovery Tax Act of 1981 while the latter changes are included in the Tax Reform Act of 1986.

declining proportion of tax-exempts in the asset base of banks (MUNI's in Table 2) also supports this prediction.[6]

However, note that this change in muni-mix could be the result of banks purchasing less municipals or divesting municipals on which the provisions apply. As long as the tax exempt investment was purchased before 1983, the 100% deduction still applies and tax-induced disposals would not be expected. Hence, in light of this "grandfather" clause, it is more likely that a bank will purchase less (rather than divest) tax-exempt securities in response to the tax code changes (see Gelfand and Hanweck, 1986).

The work of Scholes et al. is nonetheless relevant to this paper. The analysis in this paper focuses on the informational usefulness of the signals provided by the components of bank income, one of which reflects some investment portfolio activities. Since the Scholes et al. analysis was designed to explain why banks undertake certain portfolio transactions, their results provide evidence on the variables which are relevant to, (and will be considered in), an expectation model for STGL's.[7]

In summary, a number of institutional and tax features are relevant to a discussion of bank investment portfolio activities. Part of the discussion in the next section is focused on the relationship between these alternative portfolio transactions and

---

6. See Peek and Wilcox (1986) for a discussion of the implications of this tax change on the municipal bond market.

7. Scholes et al. did not compare the information usefulness of alternative bank income components as is done in this paper.

their implications for the valuation signals provided by the STGL income component.

1.2 Bank Income Component Valuation Signals

The IBST income component was for many years considered an important measure of bank operating earnings (SEC, 1983a). IBST includes interest revenue earned on loans and investments and fees collected for various services provided by the bank. Major expenses within IBST include interest expense on deposits and borrowed funds, loan loss provision, and other administrative charges. Thus, IBST reflects the results of the bank operating activities discussed at the outset of the prior sub-section. If, as is assumed in the present research, past levels of IBST signal the bank's ability to generate future amounts of IBST (and hence, cash flows), then reported IBST should be positively related to bank values.

One part of IBST is the interest earned on the securities in the bank investment portfolio. While this data may provide information about a bank's rate of return on its investment portfolio, this earnings information may not provide a complete picture concerning bank investment activities. Recall that STGL's are recorded when a bank sells an investment security at a price different from its accounting book value. In the following two sub-sections two types of investment portfolio transactions are discussed. While each type is reflected in the amounts of reported STGL's, conditional on the

presence of certain contextual factors, their valuation implications are arguably different.[8]

1.2.1 Liquidity Transaction STGL's

As previously discussed, the investment security portfolio can serve as an important source of bank liquidity. In the normal course of bank asset management, a bank may have occasion to sell securities prior to their maturity (possibly generating STGL's). These "liquidity" transactions might be undertaken to redeploy the funds in different areas (loans) or at different risk and return tradeoffs consistent with the bank's overall portfolio management objectives.[9] The gains or losses contained in this type of signal can be viewed as an indicator of the bank's portfolio management abilities in that the gains reflect the bank's ability to select securities which have increased in value generating an increment to the nominal coupon return on the divested asset. The opposite valuation signal is implied for liquidity securities transaction losses. To the extent that the past investment performance reflected in liquidity STGL's is useful in predicting future investment performance, then these STGL

---

8. The arguments concerning the IBST and alternative STGL signals were highlighted in the debate over the 1983 SEC mandated change in bank income statement formats. See Appendix A or SEC (1983a).

9. The only assumption made in this analysis concerning the types of reinvestments undertaken by banks is that the divestment proceeds will be invested in positive net present value projects. If different investment opportunities have different net present values and if we are able to identify how the proceeds were used, then we would expect the empirical tests to have more power. As formulated, omitting information on reinvestment uses biases tests towards acceptance of the null hypothesis.

signals should be useful for predicting future cash flows and are predicted to be positively associated with bank value.

1.2.2 Tax-Benefit Rebalancing STGL's

A second type of STGL signal that is hypothesized to have different valuation implications compared to STGL signals about past investment performance is that associated with "tax-benefit portfolio rebalancing transactions" (simply rebalancing transactions hereafter).[10] Recalling the ordinary income tax treatment of STGL's discussed in the prior section, when interest rates rise unexpectedly, a bank may have a current period inducement to sell low-yielding securities since the proceeds from the divestment and the tax savings on the holding loss will then be available for investment at the prevailing higher market rates.

A numerical example might clarify the nature of these transactions. Consider a bank with a 50% tax rate, holding a $1,000, 6% annual coupon bond that was purchased at par and which matures in 5 years. If the market rate increases to 12% the market value of the investment will be approximately $783. Selling the investment gives the bank $891 to invest at 12% ($783 + $108 tax rebate on the holding loss). The increase in firm value is the present value of the difference in cash flows over the remaining 5 years less the present value of the difference in principal at maturity:

---

10. The choice of this label for these type STGL's does not imply that other STGL's do not represent rebalancing of the portfolio. Rather the implication is that tax-benefit transactions reflect rebalancing to a greater degree.

(891.50 X 12% = $ 107) less (1000 X 6% = 60) = $ 47

Assuming a bank-wide cost of capital of 10%, the PV of the after-tax Annuity of ($47 X (1 -.50)): $23.50 = $ 89.09

Less the PV of difference in principal at maturity (1000-891): (67.68)

$ 21.41

In the example, the sale of the security would result in a securities transaction loss of $217, but unlike the previously discussed STGL signal, this securities transaction loss is a positive signal for bank value. Rather than providing information on past investment performance, this signal indicates future investment opportunities at higher rates of return.[11] Whether a bank's reported securities transactions losses might reflect portfolio rebalancing and not liquidity transactions depends primarily on the following three contextual factors:

- Investment yield relative to market rates on the potentially divested securities,
- Effective Tax Rates,
- Regulatory Capital

---

11. Note that this positive signal about future investment opportunities will only occur when securities transactions losses exist. The tax rebate on the loss provides the additional funds to invest at the higher prevailing market rates and the increased net yield on the transaction. In contrast, for securities transactions gains (which would occur when market rates are below investment yields), the ordinary tax on the gains would dissipate the funds available for reinvestment and result in a lower net return on the rebalancing transaction. Thus, only when market rates exceed the yields on the portfolio (i.e., holding losses exist) will there be an opportunity to increase the yield on the portfolio by rebalancing.

Each of these factors will be discussed in turn.[12]

As bond mathematics and the example above illustrate, the greater the differential between the (lower) investment portfolio yields and (higher) market yields for investments of similar risk the greater holding losses will be in the investment portfolio - a necessary condition for the reported STGL's to be losses.[13] Tentative evidence supporting the relevance of this differential appears in Table 2. Shown in the table are sample averages (using book values) for the percentage of assets invested in securities (INV in Panel a)), IBST and STGL's as a proportion of assets (PCTIBST and PCTSTGL in Panel b)), and market interest rates (INT in Panel b)). Both INV and PCTSTGL are negatively correlated with interest rates during this period. The negative correlation between PCTSTGL and INT is consistent with the idea that when market rates rise the yield differential is larger (as is the likelihood of holding losses in bank portfolios) which presents rebalancing opportunities. The negative

---

12. Scholes et al. (1986) identify some of the same factors as are discussed here. They provide empirical evidence to support the relevance of yields, effective tax rates and regulatory capital limits for explaining investment transactions. Also, see Moyer (1988) for evidence on regulatory capital limits and bank accounting choices.

13. One source of bank data on portfolio yields and maturities is the statistical disclosures required under SEC Industry Guide 3. Under the provisions of the Guide, banks disclose the types of securities held, the maturity structure and yield on the portfolio as well as the market values of the securities held. (SEC, 1983b). In support of the informational usefulness of some Guide 3 disclosures, Beaver et al., (1986) found that Guide 3 data related to loans were related to market values and the tests in Warfield (1988) documented a market reaction to the first release of Guide 3 data related to bank foreign exposures.

correlation between INV and INT suggests that when banks rebalance, they do so away from investment securities (e.g. loans).[14]

The high market rates experienced in the early 1980's imply holding losses in bank portfolios on average and may explain the relatively large amounts of securities transaction losses taken during this period. While in recent years interest rates and securities transaction losses have declined, unexpected rate increases in the future may lead on average to increased portfolio rebalancing and higher amounts of STGL's attributable to these transactions.

A bank's tax-paying status may also affect the likelihood of rebalancing given a bank's yield position relative to the market. Since the tax rebate on the holding loss provides additional funds for reinvestment at higher yields, banks with higher effective tax rates would be expected to gain most from, and are most likely to undertake, rebalancing transactions. In contrast, banks with little or no tax liability in a given period (e.g., because of net operating losses or investment tax credits) would not be expected to benefit as much from the special tax treatment for security transaction losses.

However, for some banks, regulatory capital constraints predict that banks will not pursue rebalancing transactions even though tax-deductible holding losses exist in the portfolio. Since banks are required by bank regulators to maintain a minimum level of capital relative to their assets (5.5% nominally), some banks may not have the

---

14. Loans might be a preferable investment option in times of volatile rates (assuming demand exists) since the interest rate charged can be "pegged" to market rates through variable rate contracts.

flexibility to take advantage of rebalancing opportunities if the resulting losses leave them below their minimum capital ratios.

Thus, for banks not constrained by capital requirements and to the extent that the gain in yield from reinvesting the disposition proceeds are larger than transaction costs, a bank is predicted to undertake rebalancing transactions which will be reflected in securities transaction losses (negative STGL's) in that period. These losses are hypothesized to signal future investment opportunities and are predicted to be positive signals for bank values.[15]

Table 3 summarizes the discussion of bank operating and investment portfolio transactions and their relevance to the valuation signals provided by IBST and STGL's. In Panel a), both the IBST and liquidity STGL's are predicted to have a positive relationship with bank values since positive (negative) amounts are predictors of future positive (negative) amounts of future cash flows. In contrast,

---

15. Contracting costs related to debt covenants and/or management compensation are additional factors that might affect the likelihood of portfolio transactions (Watts and Zimmerman, 1986). Neither of these second order effects are expected to be significant for the analysis conducted in this paper. For example, Moyer (1988) found little evidence supporting the relevance of debt covenants in explaining STGL's. This result is not surprising since the long term debt to total asset ratio for the banks included in the 1986 Industrial Compustat file was only 2%. This compares to an average of 22% for all firms in the file with non-missing data from 1977-1986. In addition, our own examination of proxy statements for the banks in this study and discussion in Larcker (1987) indicates that where explicitly defined, the income measure used in short term compensation plans was income before securities transactions. Furthermore, for the banks where the definition of plan income was not explicitly disclosed, some form of long term plan or stock options was also part of the compensation package for top management. These long term compensation features would reduce a manager's incentive to undertake securities transactions in order to increase short term compensation.

rebalancing transactions are predicted to produce STGL signals which are negatively related to bank values since the losses can be positive signals about future bank prospects.

Panel b) of Table 3 summarizes the effects of macroeconomic conditions and bank-specific characteristics on the likelihood of alternative portfolio transactions reflected in STGL's. In Section 2, a valuation model is developed that reflects the relationships in Table 3 in terms of the valuation signals provided by the IBST and STGL components. Proxies for the Table 3 variables are included in the empirical models in order to distinguish between the two STGL signals and to specify market expectations on the STGL earnings component.[16]

1.3 Research Questions

The discussion to this point has highlighted the differential valuation implications of the IBST and STGL components of bank income. Within this discussion, several contextual factors were examined which are hypothesized to influence the valuation implications of the STGL disclosures. These contextual factors relate to interest rate movements in the economy and bank-specific factors including yields on

---

16. In the empirical tests outlined below, the classification of STGL's into rebalancing and liquidity signals depends on bank tax status and whether the bank reported a gain or a loss. That is, reported losses for "high tax" banks are predicted to be positive valuation signals; all other STGL's are classified as liquidity signals. While information on regulatory capital is not relevant to whether a given STGL is a rebalancing signal, (if the bank took the loss, the minimum must not have been binding), information on regulatory capital (as well as yield differentials and tax status) is used in an effort to estimate the market's expectation for STGL signals.

investment holdings and bank tax status. In light of this discussion, the following research hypotheses are posed in null form:

1. Disaggregated reporting of the IBST and STGL bank income components is not informationally useful to market participants relative to the total income measure.
2. STGL's have no incremental information content relative to IBST.
3. The information content of the STGL component is not conditional on whether the reported amounts are gains or losses and/or on the bank's tax position.

The first hypothesis is relevant to a general analysis of the valuation implications of the STGL and IBST bank income components relative to the total net income number and to the merits of disaggregated reporting of the income components. This hypothesis will be tested by comparing the explanatory power (based on adjusted R^2 and incremental F tests) of regression models that explain abnormal security returns at the release of the bank income component data. Since banks first release information on these earnings components in their preliminary earnings release, these tests are conducted at this earnings announcement date. Observing increased explanatory power for the disaggregated model compared to the total income model supports the informational usefulness of the IBST/STGL component partition. This result would be expected if both the IBST and STGL components exhibit differential information content as signals of future bank prospects (rejection of Hypothesis 2).

Even if the explanatory power of the disaggregated model does not exceed that for total income (e.g., because STGL's are

insignificant), disaggregated reporting might still be supported if the market reaction to IBST exceeds that for the total net income measure. If STGL's are transitory in nature and have little information content relative to IBST, then separate disclosure of STGL's might be useful to investors for disentangling the more valuation-relevant IBST component from total net income.

The third hypothesis further investigates the information content of STGL's. An alternative explanation for observing insignificant valuation-relevance for the STGL component would be the manner in which that component's relationship to market value is specified. If rebalancing and liquidity STGL's are combined in the same STGL variable then we would expect some of the positive and negative effects on bank value to cancel out and the STGL component might exhibit less significant information content.

Thus, to address the third hypothesis and to assess the validity of the component distinction rationale outlined in the prior section, the abnormal returns models will also be specified with STGL's classified as rebalancing or liquidity signals for a given bank earnings release based on the sign of the reported STGL's and a bank's tax position. Observing a significant and negative (positive) coefficient for the rebalancing (liquidity) component supports the disaggregation rationale outlined in Table 3. In the next section, valuation models are developed which will be used to formally address the three hypotheses outlined above.

3. An Informational Perspective on Bank Income

Consider the following simple valuation model:

$$V_{it} = \alpha_i \; E_t \; (X_{i,t+k}) \qquad (1a)$$

Where:

V_{it} = market value for bank i in period t,

E_t = the expectation taken at time t,

$X_{i,t+k}$ = the future valuation relevant cash flows for bank i, k periods into the future,

α_i = discount rate for bank i's expected future cash flows. This factor will be a function of the bank's expected rate of return (which is affected by risk free rates and a risk adjustment term) and growth.

In this paper, we adopt an informational perspective on the usefulness of accounting numbers and assume that the bank never reveals $X_{i,t+k}$, but that accounting information and other information can be used to estimate this valuation-relevant attribute.[17] Specifically, the following assumption is made about the relationship between accounting earnings and future cash flows:

$$X_{i,t+k} = \beta_i \; (NI_{it}) \; + \; \eta_{it} \qquad (1b)$$

Where:

$X_{i,t+k}$ is defined as in (1a),

---

17. See for example Beaver (1981) or Ohlson (1983). The model here is similar in spirit to the valuation model in Ohlson (1983) where accounting earnings have information content only when they play a role in investors' belief revision processes for $X_{i,t+k}$. Ohlson models dividends as the valuation-relevant attribute of a security and derives necessary and sufficient conditions for information items like accounting earnings to have incremental information content relative to other information.

NI_{it} = net income for bank i in period t,

β_i = a non-stochastic parameter that represents the positive relation between current NI and future valuation-relevant cash flows for bank i,

η_{it} is random error term with mean zero and is introduced in recognition that accounting earnings signal $X_{i,t+k}$ with error.

Substituting (1b) into (1a), we establish a relationship between accounting earnings and bank value:

$$V_{it} = \alpha_i \; E_t \; [\beta_i \; (NI_{it}) \;]$$

$$= \gamma_i \; [\; E_t \; (NI_{it}) \;] \qquad (2a)$$

Where: $\gamma_i = (\alpha_i)(\beta_i)$ - an earnings capitalization rate and following the developments and assumptions in (1a) and (1b) is a function of risk free rate, a risk adjustment term, growth in $X_{i\ t+k}$, and the noise in NI_{it} as a signal of $X_{i,t+k}$.

Now consider the change in value for bank i on day (s) when the accounting earnings for period q are announced:[18]

$$V_s - V_{s-1} = \gamma \; [E_s \; (NI_q) - E_{s-1} \; (NI_q)] \qquad (2b)$$

In (2b), all variables are defined as in (1a, 1b, and 2a) and bank subscripts have been omitted for notational convenience. γ is now interpreted as a revision coefficient reflecting the change in bank value over the earnings release period as a function of the revision in expectations on NI_q which (from (1b) and (2a)) maps into revisions in expectations on future cash flows.

---

18. In the empirical tests, the change in value is measured over two days to allow for leakage of information to market participants.

Finally, by dividing both sides of (2b) by value at the beginning of the announcement period yields the following unexpected return/ unexpected earnings model:[19]

$$\frac{V_{i,s} - E_{s-1}(V_{i,s})}{V_{i,s-1}} = \gamma_i \frac{[(NI_{iq}) - E_{s-1}(NI_{iq})]}{V_{i,s-1}}$$

or

$$R_{i,s} - E_{s-1}(R_{i,s}) = \gamma_i \ (UNI_{iq}) \qquad (3a)$$

Where:

$R_{i,s}$ = the stock return for bank i in the earnings announcement period from s-1 to s,

$E_{s-1}(R_{i,s})$ = the expected stock return for bank i on day s,

UNI_{iq} is a measure of unexpected net income,

γ_i is the earnings response coefficient (ERC) for bank i and reflects the abnormal return effect associated with the unexpected earnings (UNI) for quarter q announced on day s. In a cross-sectional setting this ERC reflects the average abnormal return effect for a given amount of unexpected earnings.

The relationship depicted in Equation (3a) is well established in the accounting and finance literature as one approach to assess the usefulness of reported accounting measures of income.[20] When the

---

19. Note from (2a) that after the revelation of NI at s:
$$V_{i,s} = \gamma [E_s (NI_{iq})] = \gamma NI_{iq} .$$
Then:
$$V_{i,s-1} = E_{s-1} [\gamma (NI_{iq})] = E_{s-1} [V_{i,s}].$$

20. See for example Brown et al., (1987). This ERC model is similar to that used in Easton and Zmijewski (1989). However, the Easton and Zmijewski analysis focused on explaining cross-sectional variation in the ERC on total unexpected accounting earnings while the models employed in this paper yield predictions about the ERC's on alternative unexpected bank earnings components.

estimate of γ is significant and positive this is taken as an indication that the new earnings information is correlated with revisions in investor expectations about the future cash flows that are discounted in the market place to determine share values. However, in light of the components of bank income signaling processes outlined in Table 3, potentially better representations of the returns/earnings relation for unexpected bank earnings may be reflected in Equations (3b) or (3c) - (bank and announcement period time subscripts have been omitted for notational convenience) :

$$AR = \delta_1 [\, IBST_q - E(IBST_q) \,] + \delta_2 [STGL_q - E(STGL_q)] \qquad (3b)$$

$$AR = \theta_1 [\, IBST_q - E(IBST_q)] + \theta_2 [LSTGL_q - E(LSTGL_q)] - \theta_3 [RSTGL_q - E(RSTGL_q)] \qquad (3c)$$

Where: All earnings variables are deflated by value per share at the beginning of the day ($V_{i,s-1}$ in Equation (3a)),

AR = Abnormal return for bank i in the announcement period (LHS variable in Equation (3a)),

$IBST_q$ = the IBST component of bank income measured over time q for bank i announced on day s,

$STGL_t$ = the total STGL component of bank income measured over time q for bank i announced on day s,

$IBST_q + STGL_q = NI_q$ in Equation (3a),

$LSTGL_q$ = STGL's that reflect liquidity portfolio transactions in period q announced on day s,

$RSTGL_q$ = STGL's that reflect rebalancing portfolio transactions in period q announced on day s,

$LSTGL_q + RSTGL_q = STGL_q$,

δ_1, δ_2 and θ_1, θ_2, and θ_3 are the ERC's for their respective income components.

Equation (3b) decomposes the unexpected earnings (UNI) into unexpected IBST and STGL components while Equation (3c) further decomposes the unexpected STGL signals into the rebalancing or liquidity components as suggested in Table 3. The alternative signals provided by the components of bank income that were outlined in Section 1 and their relevance to the valuation models developed in this section are illustrated in Figure 1. The IBST component is always viewed as a signal of future cash flows that is hypothesized to be positively related to bank values. However, our previous discussion suggests that STGL's can be either a signal about cash flows that is positively related to the revisions in cash flow expectations (and hence to bank values) if the amounts reflect liquidity transactions or negatively related to these revisions if the STGL's reflect rebalancing portfolio transactions.[21]

---

21. One way to interpret the valuation implications of the bank income components in Equation (3c) is to view the reported components as signals of no-growth or growth components of future cash flows (e.g. Miller and Modigliani (1966), Litzenberger and Rao (1971), and Myers (1977)). The IBST component and the liquidity STGL signals are primarily relevant to the expected cash flows from assets in place (no-growth term) while STGL's that reflect rebalancing transactions can be viewed as signals of cash flows from future investment opportunities (growth term). This growth term is usually some function of future cash flows from projects that yield higher than normal rates of return. Since portfolio rebalancing signals would occur when market yields exceed portfolio yields, they reflect proceeds from divestments that are invested at higher rates of return. Thus, rebalancing signals would seem a natural referent for this growth term.

Consider the implications of the models depicted in Equation (3a), (3b), and (3c). The specification of Equation (3a) assumes that the bank prospects being signaled by all components of reported NI_i are similar in their implications for future cash flows. Equation (3b) allows the possibility that the IBST and STGL components provide different signals about future cash flows. If these components are different in their valuation consequences, then knowledge of either components' contribution to total announced earnings would allow investors to more accurately assess the valuation implications of the announced earnings information according to the relative importance of the IBST and STGL earnings components.

Equation (3c) may provide a superior specification than either (3a) or (3b) if the STGL component reflects both LSTGL and RSTGL transactions, particularly when a bank has undertaken significant rebalancing transactions. Since negative amounts of STGL's are predicted to be associated with positive increments to AR in this setting, combining the components in an aggregate reported earnings number (as in Equations (3a) or (3b)) precludes accurate specification of STGL effects on the expectations of future cash flows and bank share values at the earnings announcement. Whether STGL's in a given period reflect rebalancing will depend on whether a bank is experiencing the contextual factors outlined in Section 1. Thus, in the tests to follow, security transaction losses for tax-paying banks are classified as rebalancing while other bank STGL's are classified as liquidity STGL's.

To summarize, a test of the relationships outlined in Table 3 and illustrated in Figure 1 can be constructed by comparing the market reaction to the release of the earnings information when the relation between the income components and returns are specified as in Equations (3a), (3b) and (3c). Observing increased significance for the model in (3b) relative to (3a) is preliminary evidence supporting the incremental information content of disaggregated bank earnings numbers. However, evidence contrary to this pattern of results may also be consistent with estimation of the ERC for STGL's (δ_2 in (3b)) being biased away from its true value. This bias will be more severe if negative STGL's reflecting rebalancing (with θ_3 predicted to be negative in (3c)) are combined with STGL's reflecting liquidity transactions (with θ_2 predicted to be positive in (3c)). In this instance δ_2 will be biased towards zero and may appear insignificant when it is not.

By comparing the results from estimating Equation (3c) to (3b) we can further assess the information content of STGL's (Hypothesis 2) and the relevance of the factors that may affect the informational usefulness of the STGL component and the IBST/STGL component partition (Hypothesis 3). Observing higher explanatory power for the expanded component model and significant non-zero values for the θ_2 and θ_3 ERC's in the predicted direction suggests that the differential valuation implications of the alternative STGL signals outlined in Figure 1. Specifically, different signs for the liquidity vs. the rebalancing STGL coefficients would argue for the usefulness of

disaggregated bank income reporting at the preliminary earnings announcement date.[22]

3. Empirical Design

This section is divided into three subsections. Following a brief discussion of the sample and data, the empirical versions of the event test models developed in Section 2 will be described.

3.1 Sample and Data

The empirical tests of the information content of bank income components are conducted at the quarterly earnings announcement dates from 1980-1985. The 48 banks included in the sample met the following criteria:

1. Income statement and balance sheet data were available on the Bank Compustat tape from 1978 to 1985.

2. Daily security returns were available on either the CRSP or NASDAQ return files for the 200 days surrounding the earnings announcements made during 1980-1985.

3. Earnings announcement dates were available on the Bank Compustat or in The Wall Street Journal Index.

4. The amount of STGL's was released in the preliminary earnings release.[23]

---

22. Although Liquidity Transaction STGL's are modeled to be positively related to revisions in expectations about future cash flows in Figure 1, their valuation consequences relative to IBST might be quite different. These differences would be reflected in different ERC's (although of the same sign) for those components in (3c). Furthermore, in an event setting, if the market is able to infer liquidity portfolio transaction information based on IBST and/or Guide 3 portfolio data (e.g., about investment yields), then we might observe little or no market reaction to the liquidity STGL's in (3c).

23. Because of the segregated format of bank income statements prior to 1983, all banks satisfying the previous three criteria also met

5. Value Line forecasts for at least four consecutive earnings announcements were available during the test period.[24]

Table 4 contains an overview of the sample bank characteristics including sources for the security return data and number of Compustat banks in the final sample. In addition, the table contains comparison figures for all Compustat/CRSP banks and for an "average" insured commercial bank. Since larger and more widely held firms are typically followed by Value Line, it is not surprising that the banks in this sample are larger than the typical bank. Another difference between the sample banks and the comparison groups is that on average they invest a smaller percentage of their assets in investment securities.[25] However, the ratio of STGL's and IBST to total assets

---

this criterion during the the 1980-85 time period. However, following the change to a one-step income statement format, it is not clear that all banks have provided details on STGL's in their earnings releases. Availability of component detail was verified from actual news releases made by banks or was based on data disclosed in the WSJ or the PR Newswire data base for the 1983-85 time period. Where it was not certain that STGL detail was provided by a bank in the latter period earnings releases, the bank was excluded from the sample (26 banks' releases). See Appendix A for a more complete discussion of bank income reporting practices.

24. Analysts forecasts are used to specify market expectations for the NI and IBST income components. See Brown et al. (1987a, 1987b) for evidence on analysts' forecast superiority relative to time-series models and evidence that the analysts' forecasts are better proxies for the market's quarterly earnings expectation. Given a 48 bank sample and a six year test period provides at maximum 1152 quarterly announcements for the empirical tests. Missing data, including STGL detail in the post-1983 period, analyst forecasts, and elimination of banks with confounding information releases (e.g., capital structure changes) resulted in 745 bank/quarters for the tests.

25. Larger banks are usually more diversified in their operations which gives rise to alternative investment opportunities. This may explain the sample banks' lower INV compared to the other banks. (see Johnson and Johnson (1985)).

is the same sign and of similar magnitude for the sample banks and the other two more general bank groups.[26] Thus, while the sample banks exhibit differences in size and asset composition relative to other banks, this final similarity should diminish concerns about the representativeness of the sample for assessing the information content of the bank income components for other U.S. banks.

3.2 Market Reaction Tests

The empirical specifications of the event tests of Hypotheses 1, 2 and 3 correspond to the theoretical models in Equations (3a), (3b), and (3c) in Section 2. These models will be estimated using pooled time-series and cross-sectional data.

3.2.1 Empirical Models for Equations (3a) and (3b)

$$AR_i = b_0 + b_1 [NI_i - E(NI_i)] + e_i \qquad (4a)$$

$$AR_i = c_0 + c_1 [IBST_i - E(IBST_i)] + c_2 [STGL_i - E(STGL_i)] + e_i \qquad (4b)$$

Where: All earnings variables are scaled by the market value of equity at the beginning of the announcement period,

AR_i = two day abnormal return for bank i cumulated over the day before and the day of the earnings announcement in The Wall Street Journal (WSJ),

NI_i = total income announced by bank i in the event period,

---

26. Although not reported in Table 4, the time trend of PCTSTGL's for the different bank groups supports this contention. As in Table 2 PCTSTGL's were the most negative for all three groups in 1981 with the mean increasing towards zero in 1982 and 1983.

$IBST_i$ = Income before Securities Transactions announced by bank i in the event period,

$STGL_i$ = Securities Transactions Gains/Losses announced by bank i in the event period,

$IBST_i + STGL_i = NI_i$ in (4a).

E = expectation taken prior to the earnings release. Specification of expectations for the earnings components is discussed below,

e_i is a regression residual assumed to be distributed i.i.d. normal,[27]

b_0, c_0 are estimates of the mean abnormal return in the event window in the absence of an information release.

b_1, c_1, and c_2 are the earnings response coefficients (ERC) for their respective income components and measure the average market reaction to the release of the unexpected earnings information.

Model (4a) is the empirical version of Equation (3a) and is viewed as a benchmark for assessing the incremental information content of the income components. This specification reflects an information environment where total net income is the only relevant earnings measure to market participants at the time of the earnings release. However, as discussed earlier (and documented in Appendix A) banks have also provided information on the STGL component of earnings within the preliminary earnings release. To assess the valuation implications of dissaggregating net income into IBST and STGL's, Equation (4b) (corresponding to Equation (3b)) is specified to include unexpected amounts of the IBST and STGL components. The implications

---

27. Cross-sectional dependence induced by conducting tests on firms from the same industry is not expected to be a problem in this study because the event dates are randomized across calendar time. In addition, Bernard (1987) provides evidence that even in intra-industry settings, cross-sectional dependence is not that severe for daily market model residuals.

of these two models for the hypotheses of interest are addressed following a discussion of the specification of the empirical variables.

3.2.2 Specification of Variables

Abnormal Returns and Announced Earnings

Abnormal Returns were estimated by deducting a benchmark return from the realized return in the event window. To remove market-wide effects on security returns, a benchmark return was calculated using the parameter estimates from a value-weighted market model regression estimated over a 200 day period centered on the earnings release date. These parameter estimates were then combined with the observed market-wide return in the event window to yield the benchmark or expected return for the bank.[28] The realized earnings components were obtained from the Bank Compustat file. These amounts were verified against Value Line reports and the WSJ to help assure that they correspond to the earnings components forecasted by Value Line and to the amounts actually released to the market during the event period.[29]

---

28. The main results reported below were unaffected by use of alternative benchmark estimations (equal-weighted market model residuals or mean adjusted returns).

29. The main tests reported below were repeated with no material differences in the results after deleting 42 bank/quarters where descrepancies were observed between Value Line, WSJ and Compustat sources.

NI and IBST Earnings Expectations

Earnings forecasts provided by Value Line Investment Survey were used as the proxy for the market's expectation for both the NI and IBST earnings components at the quarterly earnings announcement date. One important consequence of the 1983 change in bank income statement reporting format is relevant to the discussion in this section. Prior to the change, Value Line forecasted the IBST earnings measure in their reports while following the change, they have forecasted the net income measure. Thus, expectations for the NI (IBST) component in the pre (post) 1983 periods will be the IBST (NI) forecast plus (minus) the STGL expectation. In either sub-period, determination of either the IBST or NI expectation will depend on obtaining a correct specification of STGL market expectations. This is the subject of the next section.

STGL Earnings Expectations

As analysts do not forecast STGL's, specifying expectations on that earnings component is not as straight-forward as the specifications for IBST and NI. One reasonable assumption might be to assume that the market expects zero STGL's in any given bank/quarter. This assumption is reasonable if market participants find it difficult to accurately anticipate the amount of STGL's reported by a bank. Support for this expectational specification is provided in the following excerpts found in Value Line reports. These excerpts highlight the relative uncertainty associated with the STGL earnings component - that (1) there is "... no way to forecast the results of

securities transactions ... " (PNC Financial, April, 1983) and (2) "... volatile components of non-interest income such as bond trading profits are just as likely to go up next quarter as they were down last quarter." (Mercatile Texas, October, 1985).

However, the discussion in Section 1 suggested that knowledge of information about bank portfolio yields relative to market interest rates might be useful to market participants for identifying periods when holding losses or gains exist in the investment portfolio and hence to form expectations about the magnitude and/or sign of reported STGL's for that quarter (conditional on regulatory capital and tax-paying status). To the extent that market participants use bank and/or market-wide data to estimate a bank's STGL's in a given quarter, a zero specification for expectations on STGL's may yield a noisy measure of the unexpected STGL variable.

To assess whether a more accurate market expectation could be estimated using such data, a regression model for predicting STGL's was developed using information on bank unrealized holding losses/gains, market interest rates, regulatory capital, and bank tax status. The details of this model are discussed in Appendix B. In brief, for the cross-section of banks, realized STGL's were regressed on the proxies for the variables outlined in Table 3 based on data in the four quarters just before the announcement quarter. The cross-sectional coefficient estimates from the model were then combined with individual bank data for the relevant announcement quarter to form individual bank/quarter STGL expectations.

A comparison of the forecast errors for this model and the zero expectation model is contained in Appendix B and indicates that a zero expectation model is marginally superior to the regression-based model since expectational errors are more tightly distributed using this specification, particularly for positive values. At a minimum, it would appear that the two models are equally well specified. More importantly, use of expectations from the regression model in the empirical tests of Equations (4a), (4b) and (4c) (discussed below) yielded essentially the same results as those found when the zero model was used.[30] Thus, to save space, all results reported herein are based on the zero STGL expectation model.

Descriptive Statistics - Abnormal Return Regression Variables

Table 5 contains descriptive statistics for the excess returns (AR) and unexpected earnings amounts for NI, IBST, and STGL (UNI, UIBST, and USTGL respectively). As expected, the mean abnormal return is not significantly different from zero. Note that the unexpected earnings variable distributions are somewhat skewed to the negative side of zero and consistent with prior literature (e.g., Brown et al., 1987a) the negative means for the analyst forecast errors reported in Table 5 suggest that on average, analysts appear to be optimistic in their earnings projections. Table 5 also reports pair-wise correlation statistics between AR, UNI, UIBST, and USTGL. These tests provide some preliminary evidence supporting the information content

---

30. This is not surprising since the forecast errors from the two models are highly correlated (product moment coefficient = .80).

of the earnings data with the negative correlation between USTGL and AR (-.058; $p < .15$) suggesting the possible relevance of rebalancing STGL's for explaining cross-sectional variation in AR.

However, the primary tests of the information content hypotheses outlined above should involve a comparison of the explanatory power between the estimations for Equations (4a) and (4b) based on an incremental F test. Observing increased explanatory power for (4b) relative to (4a) provides preliminary evidence supporting the usefulness of disaggregating the net income number into STGL and IBST components. If STGL's and IBST provide additional information over and above that contained in total net income, then we would expect to observe a stronger relation between the market reaction and the unexpected component amounts compared to net income and the explanatory power of (4b) should exceed that of (4a).

However, observing no difference in explanatory power between (4a) and (4b) and a less significant estimate for the ERC measured by the coefficient for STGL's (c_2) may be the result of combining (into one variable) STGL signals that are predicted to be postively and negatively related to revisions in future cash flows (liquidity and rebalancing STGL signals). The model developed in the next sub-section is designed to test whether STGL's provide different signals conditional on the tax and investment portfolio characteristics of individual banks.

3.3 Rebalancing vs. Liquidity Signal Empirical Tests

The following model is the empirical analog for Equation (3c):

$$AR = d_0 + d_1 [IBST_i - E(IBST_i)] + d_2 (1-F_i) [STGL_i - E(STGL_i)] + d_3 F_i [STGL_i - E(STGL_i)] + e_i \quad (4c)$$

Where:

F_i = 1 if bank i is predicted to have undertaken rebalancing transactions in quarter t and F_i = 0 otherwise.

d_0 has a similar interpretation as b_0 and c_0 above.

d_1, d_2, and d_3 are the (ERC's) for their respective income components and measure the average market reaction to the release of the unexpected earnings component information.

Other variables are defined as described earlier including scaling by the market value of equity at the beginning of the announcement period.

In Equation (4c) the F_i variable interacting with STGL's is included to classify bank/quarters as either reflecting rebalancing or liquidity transaction signals and thus to isolate the unique valuation signals of STGL's in a period when a bank has undertaken rebalancing transactions. As the previous discussion suggests, F_i should be set to one if an individual bank is experiencing the contextual factors associated with rebalancing benefits. Recalling the discussion in Section 1, this is more likely when a tax-paying bank reports securities transaction losses. As suggested in Table 3 securities transactions losses in these bank/quarters are predicted to be positive signals for future bank prospects.[31] Thus, the F_i variable,

---

31. Regulatory capital minimums were not used to specify the F_i variable. Since the constraints associated with these minimums are more important for assessing the likelihood that a tax-paying bank will sell securities at a loss, this regulatory variable would be more

when equal to one, will interact with the unexpected STGL variable and allow the estimation of d_3 which is predicted to be negative. Note that when $F_i = 0$, Equation (4c) collapses to Equation (4b) where unexpected STGL's reflect liquidity portfolio transactions. In these bank/quarters unexpected amounts of STGL's are predicted to be positively associated with AR (i.e., $d_2 > 0$).[32]

As noted above, a bank/quarter is identified as rebalancing if the bank reports losses (STGL's are < 0) and a bank has higher effective tax rates. Identifying loss quarters is direct; specifying bank/quarters as high or low tax is based on data disclosed in bank tax footnotes contained in the most recent annual report. Banks that reported net operating loss carry-forwards (NOL) or investment tax credit carry-forwards (ITC) were classified as low tax.[33] These

---

relevant for estimating the markets' expectations for STGL's (see the discussion above and Appendix B) and not whether a given STGL signal reflects rebalancing or liquidity transactions.

32. Although reported STGL's represent a net of gains and losses, it is the net amount reported that is relevant for the tax benefits associated with rebalancing transactions. Hence, the model in (4c) classifies a bank's STGL's in a given quarter as either liquidity or rebalancing signals. It is possible that some of the STGL's which are small in magnitude and negative actually reflect liquidity transactions even for tax-paying banks. It is not clear how large the losses must be for there to be no miss-classifications of STGL's as rebalancing signals. However, the possible bias introduced as a result of this classification rule should be in the favor of the null hypothesis.

33. Scholes, Wolfson and Wilson (1988) investigated a number of alternative measures of tax status for banks and found this type classification to work best. I am grateful to Scholes et al. for sharing their bank tax footnote data with me. Their data covered the period from 1980 to 1986. The author collected the necessary data for the last quarter of 1979. Following Scholes et al., and since the presence of NOL or ITC only suggests the possibility of a bank paying less tax in the subsequent period, the tax variable was set to zero

banks are expected to gain the least from rebalancing transactions as they do not receive as large a tax rebate for a given security transaction loss. Banks with no NOL's or ITC's are classified as having higher effective tax rates. These are the banks for which securities transaction losses should provide more positive valuation signals.

Table 6 provides descriptive data on the distribution of USTGL conditional on the F_i variable and on the variables used to specify this rebalancing variable. Consistent with the predictions in Section 1 (and summarized in Table 3), high tax banks have a lower mean for their STGL's (and hence lower unexpected STGL's) than the overall mean (-.00247 < -.00187). Thus, it would appear that these banks are more likely to sell securities at a loss, possibly owing to the benefits of rebalancing transactions.[34] Based on the specification outlined above, rebalancing signals, which exhibit the lowest overall mean USTGL measure in Table 6 (-.00557), are predicted for 341 or 45% of the bank quarters, while liquidity signals are predicted for the remaining 404 or 55% of the bank quarters. Finally, the pairwise correlations between URSTGL's, ULSTGL's and AR in Table 6 provide preliminary support for opposite valuation signal predictions for these earnings components as suggested in Table 3.

(assumed to be high tax) when tax footnote data were not available (<10 observations).

34. Although not reported in Table 6, comparison of the magnitude of STGL's within tax status supports the relevance of taxes for these transactions. For example, average loss USTGL's for high tax banks are more negative relative to low tax loss bank/quarters (-.00557 < -.00298) and average gain USTGL's are higher for low tax bank/quarters compared to high tax bank/quarters (.00259 > .00187).

To summarize, the final tests for the valuation rationale for the usefulness of the bank income components involve tests of the differential signals of STGL's as specified in (Equation (4c)). These tests compare the explanatory power of the regressions estimated for Equations (4b) and (4c) (using adjusted R^2 and incremental F tests) and assess the sign and statistical significance of the coefficient estimates (t tests). With respect to the information content of STGL's, if reported STGL's in a given period reflect rebalancing transactions, then the signaling discussion predicts these amounts to be negatively related ($d_3<0$) to the market reaction at their release and the adjusted R^2 of equation (4c) should be greater than that for Equation (4b). Results of this nature would support the valuation rationale illustrated in Figure 1 and therefore may provide evidence on the usefulness of the IBST/STGL income component partition within total bank income for bank investors.[35]

4. Empirical Results

Discussion of the empirical results is divided into three sub-sections. In the first section, results from the benchmark model for total net income (Equation (4a)) and the IBST/STGL decomposition (Equation (4b)) are presented. Section 4.2 reports on the results of estimating Equation (4c). Section 4.3 reports on the sensitivity of

---

35. These inferences are valid only to the extent that STGL's are not correlated with the other income component data also released at the preliminary announcement. One possibility is the amount of loan loss provision. Scholes et al. (1988) included a control in their tests for this accrual amount. A control for loan loss provision is considered in the empirical tests below.

the results to a sub-period breakdown and controls for loan loss provision and interest rates.

4.1 Market Reaction to Announcement of Bank Earnings

Table 7 contains the results from estimating Equation (4a) and provides a benchmark against which to compare the models that decompose bank earnings into IBST and the alternative STGL components. While the coefficient estimate for total net income is positive as predicted, it is not significant at conventional levels. Furthermore, the low adjusted R^2 indicates that the unexpected accounting information as measured by the unexpected net income variable (UNI) explains little of the cross-sectional variation in security returns at the quarterly earnings announcements.

In contrast, the results reported for Equation (4b) in Table 7 provides the first evidence supporting the informational usefulness of disaggregating net income into IBST and STGL components. The adjusted R^2 for the disaggregated model increases dramatically and the magnitude and significance of the IBST component (<.001) exceeds the estimate for total net income reported for Equation (4a). The F statistic for the increase in explanatory power between (4b) and (4a) is significant at less than .001 and thus supports the rejection of Hypothesis 1 in Section 1 concerning the incremental information content of disaggregated bank earnings numbers compared to the total income measure.

In addition, the results reported for Equation (4a1) in Table 7 indicate that even in the absence of details on STGL's that the IBST

measure of bank earnings is more strongly associated with abnormal security returns at the preliminary earnings announcement than is total net income. This suggests, at a minimum, that disaggregated reporting of bank earnings components may be useful for disentangling the IBST earnings signal within total net income.

Results for STGL's reported for Equation (4b) suggest that STGL's do provide valuation relevant signals at the earnings announcement date (rejection of Hypothesis 2). The coefficient estimate for STGL's is negative and significant with a p-value of less than 5%.[36] The results for Equation (4b) provide preliminary evidence concerning the possible relevance of rebalancing STGL's for explaining cross-sectional variation in abnormal returns at the earnings announcement since even without isolating likely rebalancing bank/quarters, the coefficient estimate for USTGL is negative and significant. The empirical tests documented in the next section further address the relevance of rebalancing and liquidity STGL signals for the information content of the bank earnings components by testing whether liquidity STGL's are positively associated with abnormal returns while rebalancing STGL signals exhibit a negative relation.

---

36. As no specific prediction was made with respect to the sign of STGL's in Equation (4b), this significance level is two-tailed.

4.2 Rebalancing / Liquidity Signals

4.2.1 Main Results

The lower panel of Table 7 contains the results from estimating Equation (4c) where STGL's are classified cross-sectionally into rebalancing and liquidity valuation signals based on a bank's tax status and the sign of STGL's. The coefficient estimates for each of the earnings components have the predicted sign and are significant at conventional levels. In addition, the explanatory power (adjusted R^2) of this model exceeds that for any of the previous models reported on in Table 7. These results support the predictions outlined above and provide evidence that bears both on Hypothesis 2 and 3.

With respect to the information content of STGL's (Hypothesis 2), an F-test on the reduction in error sum of squares between equation (4c) and (4a1) rejects the hypothesis of no incremental explanatory power for the regression upon inclusion of the unexpected STGL information variables (p-value < .001). These results reinforce those reported in the prior section and support the rejection of no information content for STGL's as stated in Hypothesis 2.

The results for Equation (4c) also support the rejection of Hypothesis 3 concerning why STGL's have information content. The F statistic comparing the explanatory power of (4c) to (4b) is significant at less than .001. Thus, by conditioning the specification of the STGL signals on a bank's tax status and sign of its reported STGL's, we are able to explain more of the cross-sectional variation in abnormal security performance surrounding the

announcement of the earnings components. These results support the valuation rationale illustrated in Figure 1 for the information content of STGL's and suggest that information about the IBST/STGL income component partition is informationally useful to market participants in assessing the value of banks.

4.2.2 Regression Diagnostics

This section reports on diagnostics which were performed to assess how well the model in (4c) conforms with the assumptions of ordinary least squares (OLS) estimation and thus to assess the validity of the individual coefficient significance levels reported in Table 7. These analyses focus on tests for heteroskedasticity and linearity of the regression function.[37]

---

37. While the regression diagnostics reported here refer only to Model (4c), similar diagnostics were performed on the sub-models with qualitatively equivalent results. The influence diagnostics suggested by Belsley, Kuh and Welsch (1980) were also used to identify influential observations and possible errors in the data. 55 observations were identified as "influential" based on size-adjusted cutoffs for statistics that measure the effect of the observation on the projection matrix, studentized residuals, covariance matrix, or predicted values. Each of these observations were checked for errors and eight were deleted from the sample in the preliminary stages of analysis due to confounding announcements (e.g., capital structure changes). The earnings forecast errors for four additional observations were adjusted to reflect updating of the Value Line forecast with management forecasts announced after the Value Line date. As no apparent errors were uncovered for the remaining observations, they were retained in the sample. To assess the effects of outlier independent variable observations on the results, the tests were repeated after truncating the independent variables at two standard deviations from the mean. These tests yielded the same pattern of results as reported in Table 7. The effects of outlier dependent variables were discounted based on the results from robust regression. Indeed, after deletion of extreme residual observations the results for Equations (4c) (and (4c2) below) were more significant.

To test for heteroskedasticity, the Breusch/Pagan (1979) test was conducted. The null hypothesis of equivariance was rejected ($p<.001$) with the coefficient on UIBST being strongly significant.[38] Before proceeding to weighted least squares (WLS), non-linearity of the regression function was assessed as a potential source of the heteroskedasticity by adding squared values of the independent variables to Equation (4c). Results for that regression indicated that the UIBST variable exhibits a non-linear relation with abnormal returns.

Table 8 contains the results of adding a squared UIBST variable to (4c) (Equation (4c1)). Note that the estimated coefficients in this model increase in magnitude and significance.[39] However, even after controlling for the non-linearity in UIBST, the Breusch/Pagan test is still rejected for Equation (4c1). The third model in Table 8 (4c2) is a weighted least squares regression of Equation (4c1) (i.e., the "best" specification) with weights based on the predicted residuals from OLS estimation of Equation (4c1).[40]

---

38. The Breusch/Pagan Test tests whether variation in the squared standardized residuals can be explained by variables thought to be related to the source of the heteroskedasticity (e.g., independent variables). See Johnston (1984) p. 300.

39. Robust regression results from Equations (4c) and (4c1) were also used to assess the specification of the latter model. While the IBST2 variable is significant, tests on changes in the coefficient estimates from the base model were not significant at conventional levels providing further support for the robustness of the Table 7 results.

40. If the weights chosen are proportional to the reciprocal of the variance of each observation then the WLS coefficients are best linear unbiased (Johnston (1984)). For the results in Table 8, weights were based on the predicted residuals from OLS estimation of (4c1), (i.e., a two stage Aitkins' estimator (see Johnston (1984), p. 303).

All coefficients in the WLS estimation increase in significance when compared to (4c) and (4c1), except for ULSTGL, which declines slightly compared to (4c1). In summary, although the residuals from Equation (4c) exhibit heteroskedasticity and the specification of that model ignores an apparent non-linearity in the UIBST variable, the results are robust and even stronger once measures are taken to control for these specification issues.

4.3 Additional Follow-up Analyses

Three additional sets of follow-up analyses are reported in Tables 9 and 10. To assess the robustness of the results reported in Table 7, the models were also estimated on sub-period data from before and after the 1983 change in income statement format.[41] These sub-period results are contained in Table 9. While the magnitude and significance of individual coefficients vary between the two sub-periods, the explanatory power of Equation (4c) still exceeds that for both (4a) and (4b) in their respective sub-periods and is significantly higher in the pre-1983 period ($p<.01$). Furthermore, the coefficient on RSTGL remains significant in both sub-periods ($p<.05$ in the earlier, only $<.10$ in the later).

---

41. This partition was chosen because, as noted earlier and documented in Appendix A, not all banks have provided STGL details in their post-1982 earnings releases. This resulted in a different sample between the periods since these banks were deleted from the tests. In additon, Value Line (see Section 3) has forecasted different EPS measures in the two periods. Thus, the pre-1983/post-1982 partition allows us to assess to some extent whether these factors are somehow driving the overall sample results.

Note that the magnitude of the improvement in explanatory power upon inclusion of the STGL variables is less in the post-1982 period. Indeed, the ULSTGL coefficient estimate is insignificant in this latter sub-period and the F-statistic for the reduction in error sum of squares between (4c) and (4a1) is not significant at conventional levels. However, observing that information about the ULSTGL/URSTGL signals is less relevant in this latter time-period is not surprising since the number of rebalancing bank/quarters in the post-1982 period is considerably lower compared to pre-1983 which reduces our ability to estimate the URSTGL coefficient in the latter period. See Table 9 for details on the number of rebalancing bank/quarters in the sub-periods. In summary, the general pattern of results across the sub-periods is consistent with those for the entire sample period and therefore provide further support for the relevance of the IBST/STGL earnings partition and the valuation rationale for the information content of STGL's.[42]

A second and third set of follow-up analyses reported in Table 10 address the possibility that the evidence in Table 7 supporting the information content of STGL's is attributable in part to the release

---

42. Another potential reason for the difference in results for (4a) relative to (4b) between the sub-periods may be due to differences in the accuracy of expectations for the IBST and NI variables. As was noted in Section 3, prior to 1983, Value Line forecasted EPS amounts for IBST while subsequent to the one-step reporting change they have forecasted the NI measure of earnings. Based on a zero expectation assumption for STGL's, the expectation for both IBST and NI is the same in each period and UNI will be mismeasured relative to UIBST in the pre-1983 period to the extent that the zero STGL assumption is not valid. Of course, just the opposite effects are predicted in the latter period.

of other valuation-relevant information at the time of the earnings announcement or that the STGL signals may proxy for an omitted variable in the returns/earnings relation. Of particular interest for omitted information items is the incorporation of a control for the amount of loan loss provision since details on this earnings component are commonly contained in bank earnings releases (see Appendix A). If banks smooth their reported earnings by counteracting unexpected loan loss recognition with securities transactions gains, then it is possible that STGL's may proxy for the effects of unexpected loan loss provision. For example, by selling securities that have appreciated in value in a quarter when the bank also books a large loan loss provision, a more stable earnings per share stream can be maintained.[43]

For Equation (4c3) in Table 10 unexpected loan loss provision (ULLP - expectations based on a random walk assumption) are included in the basic model (4c) and the IBST component (NUIBST) is specified net of the ULLP variable.[44] Note that the results reported in Table 7

---

43. The paired correlation between USTGL and ULLP is .12. In addition, discussion in Value Line and evidence in Scholes et al. (1988) supports the plausibility of this smoothing scenario. For example, the Value Line report for First Wisconsin in January, 1984 stated that : "... management was tempted by a non-recurring gain to add some additional expenses (loan loss provision)...". Scholes et al. (1988) included a loan loss control in their model to explain annual STGL's (it was significant at <.001). They cited a WSJ article about First Bank System which reportedly realized securities gains in 1986 to offset write-offs of bad debts.

44. NUIBST was formed by adding the random walk ULLP measure back to the UIBST measure of unexpected earnings. Since higher unexpected amounts of loan loss provisions should be bad news, the sign on ULLP should be negative.

are robust to the inclusion of unexpected loan loss provision. All variables (including ULLP) have the predicted signs and remain significant allowing us to discount an omitted information variable explanation for the previously reported results. Indeed, both STGL coefficients are more significant in this model compared to the prior specifications.

Equation (4c4) in Table 10 includes a variable to control for possible interest effects on bank ERC's. Recent research by Collins and Kothari (1989) indicates that time-series variation in ERC's can be explained by differences in interest rates. As the interest rate normally enters the valuation equation as part of the expected rate of return (in the denominator as part of the discount rate), such a variable is predicted to have a negative sign (i.e., the higher the interest rate, the lower the present value of the cash flows) and the negative coefficient for URSTGL's in Table 7 may reflect that variable proxying for the interest rate component in bank ERC's. The interest rate variable (RFIBST) was formed by multiplying UIBST by the yield in that quarter for intermediate (3-6 year) treasury bonds.

The results for Equation (4c4) indicate that even with a control for interest rate effects, the STGL signal results remain. As in Collins and Kothari (1989), the interest rate control has the correct sign and is significant. More importantly, the results for the earnings variables of interest are robust (even stronger) upon inclusion of the interest rate control. Finally, for Equation (4c5) in Table 10 both the loan loss and interest rate controls are included in the model with UIBST and the STGL signals. Again, the coefficients

have the predicted signs and retain significance after controlling for both of these potentially confounding effects.

Thus, the follow-up evidence reported in Tables 9 and 10 indicates that the results reported in Table 7 on the IBST and STGL income components are robust to both sub-period partitions and a control for a potentially correlated information variable and a control for interest rates.[45] This evidence reinforces the prior evidence that supports the liquidity vs. rebalancing signal rationale for the information content of the alternative STGL signals and in turn, the incremental informational usefulness of the IBST/STGL bank earnings partition relative to the total net income measure.

---

45. The tests were also repeated after deleting 18 bank/quarters when dividends changes were announced. Any differences in the pattern of results reported above were immaterial. The models in Table 10 were also estimated in reporting sub-periods with similar results to those contained in the body of the table. In addition, the reporting period, interest rate and sub-period models were estimated using WLS with no appreciable change in the pattern of the results.

Table 2

Descriptive Data on Bank Assets and Income Components [a)]

Panel a) Comparisons Between Banks and Industrial Firms

	1979	1980	1981	1982	1983	1984	1985	Mean
Banks								
Assets ($)	8019	8713	9279	9621	10321	11358	12815	10018
Loans (%)	54.3	52.7	52.8	52.0	53.2	56.9	57.3	54.2
INV (%)	17.7	18.0	16.5	16.7	18.0	16.4	17.5	17.3
MUNI's (%)	8.9	8.6	7.6	6.9	6.0	5.5	7.0	7.2
Industrials								
Assets ($)	2519	2836	3141	3425	3618	3722	4142	3343
INV (%)	2.6	2.7	2.7	2.8	2.9	3.0	3.4	2.9

Panel b) IBST, STGL's and Market Interest Rates

PCTIBST (%)	.78	.79	.77	.76	.67	.64	.64	.72
PCTSTGL (%)	-.044	-.052	-.091	-.065	-.001	-.0001	.064	-.027
INT (%)	10.4	11.2	14.7	10.5	8.8	9.9	7.8	

Product/Moment Correlations of INT with: PCTSTGL's -.68 ($p < .05$)
INV -.83 ($p < .01$)

a) Sample averages for banks with available data reported on the 1987 Bank Compustat Tape. (Assets in millions of dollars; all other entries are percentages). Correlations based on data from 1976 to 1985 (n=10).

Industrial firm data based on data for firms with available data on the 1986 Compustat Industrial File:

Loans - Total Loans / Assets
INV - Total Investment Securities / Assets
MUNI's - Tax-Exempt Investments / Assets
PCTIBST - Income Before Securities Transactions/ Assets
PCTSTGL - Securities Transactions Gains and Losses/Assets
INT - Interest rate based on 1 year T-Bill yields from Ibbotson and Sinquefield (1985).

Table 3

Components of Bank Income

Panel a) Valuation Signals of Bank Income Components

Activity	Nature of Signal	Effect on Bank Value
Operating	IBST - Signal of Past Operating Performance	Positive Amounts Increase; Negative Amounts Decrease
Liquidity Portfolio Transactions	STGL's- Signal of Past Investment Performance	Gains Increase; Losses Decrease
Rebalancing Portfolio Transactions	STGL's- Signal of Future Investment Opportunities	Losses Increase, (Gains Inapplicable)

Panel b) Factors Affecting Portfolio Transactions in a Given Period

Variable	Condition	Effect on Likelihood of Transactions
Yields	Market Rates Exceed Portfolio Yields	Rebalancing More Likely
Effective Tax Rates	Higher Tax Rates Increase Returns to Rebalancing	Rebalancing More Likely
Capitalization Ratio	Below or Near Regulatory Minimum	Rebalancing that Results in Losses Less Likely

Table 4

Sample Characteristics

Panel A Sample Criteria

Banks on Compustat:	147	Source of Security Returns	
Banks not followed by Value Line or not in the CRSP or NASDAQ files:	(99)	CRSP	32
		NASDAQ	14
		Combination[a]	2
Sample Size for Event Tests	48		48

Panel B Sample Descriptive Data and Comparisons [b]

	Assets	LOANS	INV	PCTIBST	PCTSTGL
All Insured Banks	122	55.3	20.7	.83	-.055
Compustat Banks	9484	52.7	17.3	.751	-.053
Sample Banks	19925	55.1	13.6	.662	-.060

a) The combination category indicates the number of banks that had returns over the 1979-1985 period available on either the CRSP or NASDAQ tapes due to a change in exchange listing.

b) Averages are based on data from 1980-1983. Comparisons not made for years prior to 1980 and after 1983 due to a reporting change by the Federal Reserve for bank income components. Averages for all insured commercial banks (N=14,400) reported in the Annual Statistical Digest of the Federal Reserve. Compustat and Sample Bank data taken from the Bank Compustat.

Assets in millions of dollars,
INV = Total Investment Securities /Assets
LOANS = Loans/Assets
PCTIBST = Income Before Securities Transactions/Assets
PCTSTGL = Securities Transactions Gains and Losses/Assets

Table 5

Descriptive Statistics - Abnormal Return Regression Variables [a)]

	AR	UNI	UIBST	USTGL
Mean	.00062	-.00274	-.00094	-.00187
t: Mean=0	.65	-1.96 [c]	-1.41	-1.65 [b]
Standard Deviation	.026	.038	.018	.031
Percentiles:				
100	.12221	.0978	.0978	.0496
75	.01411	.00284	.00348	.00029
Median	.00014	-.00038	.00000	-.00006
25	-.01347	-.00437	-.00328	-.00179
0	-.15097	-.91721	-.34723	-.83097

Product/Moment Correlations	AR	UNI	UIBST
UNI	.035		
UIBST	.176 [d]	.59 [d]	
USTGL	-.058	.882 [d]	.144 [d]

a) AR (dependent variable) is the two-day abnormal return cumulated over the day before and the day of the earnings announcement publication date in the WSJ Index,
Independent Variables:
UNI - Unexpected Total Net Income
UIBST - Unexpected Income Before Securities Transactions
USTGL - Unexpected Securities Transactions Gains/Losses

All independent variables are per share amounts scaled by the closing share price on the day preceding the cumulation period. UIBST and UNI expectations are based on the most recent Value Line forecast. Market expectations for STGL's are assumed to be zero. See Figure 2 for distribution plots.

Significance levels: b - <.10; c - <.05; d - <.01.

Table 6

Descriptive Statistics - Liquidity/Rebalancing STGL's [a)]

	Number	%	USTGL
Total Bank/Quarters	745	100	-.00187
Bank/Quarters STGL's < 0	406	54.4	-.00516
Bank/Quarters STGL's >= 0	339	45.6	.00208
Bank/Quarters - High Tax	584	78.4	-.00247

USTGL :	All Bank/Quarters	Liquidity (n=404)	Rebalancing (n=341)
Mean	-.00187 [b]	.00126 [c]	-.00557 [c]
Standard Deviation	.0309	.00582	.0450
Percentiles: 100	.0496	.0496	- .000002
75	.00029	.00110	- .000362
Median	- .00006	.00020	- .001605
25	- .00179	.000005	- .004110
0	- .83097	- .02732	- .83097

Product/Moment Correlations:	AR	UIBST	ULSTGL
UIBST	.176 [d]		
ULSTGL	.065 [b]	-.141 [d]	
URSTGL	-.068 [b]	.165 [d]	.013

a) AR (dependent variable) is the two-day abnormal return cumulated over the day before and the day of the earnings announcement publication date in The WSJ Index,
UIBST - Unexpected Income Before Securities Transactions,
USTGL - Unexpected Securities Transactions Gains/Losses,
ULSTGL = $(1-F_i)$ USTGL: USTGL's classified as liquidity signals,
URSTGL = (F_i) USTGL: USTGL's classified as rebalancing signals,

F_i=1 when a bank reports a securities transactions loss and is designated as high tax (banks that reported no net operating loss or investment tax credit carry-forwards in their prior year annual report).

Variables are per share amounts scaled by the closing share price on the day preceding the cumulation period. UIBST expectations are based on the most recent Value Line analyst forecast. Market expectations for STGL's are assumed to be zero.
Significance levels: b - <.10; c - <.05; d - <.01.

Table 7

Market Reaction to Bank Income Components [a)]

	Coefficient Estimates for: Intercept	UNI	UIBST	USTGL	Adjusted R^2 (%)
(4a) Total Income	.00068 (.72)	.0241 (.96)			< .1
(4b) Decompose into IBST/STGL's	.00073 (.79)		.2691 [e] (5.19)	-.0713 [c] (-2.34)	3.6
(4a1) IBST only	.00086 (.91)		.252 [e] (4.89)		3.0

Rebalancing/Liquidity STGL's

	Intercept	UIBST	ULSTGL	URSTGL	Adjusted R^2 (%)
(4c)	.00028 (.30)	.2954 [e] (5.64)	.5720 [d] (2.64)	-.0876 [d] (-2.84)	4.6

F Statistic for change in Adjusted R^2 : 4b) vs 4a) 28.50 [e]
4c) vs 4b) 9.03 [e]

a) Dependent variable (AR) is the two-day abnormal return cumulated over the day before and the day of the earnings announcement publication date in The WSJ Index.
Independent Variables:
UNI - Unexpected Total Net Income
UIBST - Unexpected Income Before Securities Transactions
USTGL - Unexpected Securities Transactions Gains/Losses
ULSTGL - USTGL's classified as liquidity signals
URSTGL - USTGL's classified as rebalancing signals

All independent variables are per share amounts scaled by the closing share price on the day preceding the cumulation period. UIBST and UNI expectations are based on the most recent Value Line forecast. Market expectations for STGL's are assumed to be zero. t - statistics in (.), all one-tailed tests except Intercepts and USTGL.

Significance levels : b - <.10; c - <.05;
d - <.01; e - <.001.

Table 8

Regression Diagnostics [a)]

	Coefficient Estimates for:					
	Intercept	UIBST	UIBST2	ULSTGL	URSTGL	Adjusted R^2 (%)
(4c) OLS Model from Table 7	.0003 (.30)	.2954 [e] (5.64)		.5720 [d] (2.64)	-.0876 [d] (-2.84)	4.6
(4c1) Non-linearity Model - OLS	-.0001 (-.13)	.611 [e] (7.68)	1.625 [e] (5.20)	.739 [d] (3.43)	-.106 [d] (-3.48)	7.8
(4c2): Non-Linearity Model - WLS	-.0001 (-.10)	.581 [e] (7.82)	1.527 [e] (6.59)	.707 [d] (3.28)	-.106 [e] (-6.63)	9.6

a) Dependent variable (AR) is the two-day abnormal return cumulated over the day before and the day of the earnings announcement publication date in The WSJ Index.
Independent Variables:
UNI - Unexpected Total Net Income
UIBST - Unexpected Income Before Securities Transactions
USTGL - Unexpected Securities Transactions Gains/Losses
ULSTGL - USTGL's classified as liquidity signals
URSTGL - USTGL's classified as rebalancing signals

All independent variables are per share amounts scaled by the closing share price on the day preceding the cumulation period. UIBST and UNI expectations are based on the most recent Value Line forecast. Market expectations for STGL's are assumed to be zero.

UIBST2 (= UIBST X UIBST) is included to control for non-linearity detected for that variable based on an extended means test. Weights used in the weighted least squares estimations are based on predicted squared residuals from estimation of (4c1).

t - statistics in (.), all one-tailed tests except Intercepts.
Significance levels : b - <.10; c - <.05;
d - <.01; e - <.001.

Table 9

Reporting Period Results [a)]

Coefficient Estimates for:

	Intercept	UNI	UIBST	USTGL	ULSTGL	URSTGL	Adjusted R^2 (%)
Pre-1983 (n=497)							
(4a)	-.0004	.003					< .1
	(-.32)	(.11)					
(4b)	-.0006		.240 [e]	-.074 [d]			2.3
	(-.51)		(3.95)	(-2.35)			
(4c)	-.0006		.254 [e]		.8106 [d]	-.084 [d]	3.4
	(-.53)		(4.20)		(2.56)	(-2.67)	
Post-1982 (n=248)							
(4a)	.0030 [b]	.424 [e]					5.5
	(1.96)	(3.93)					
(4b)	.0034 [c]		.416 [e]	.134			5.2
	(2.09)		(3.88)	(.46)			
(4c)	.0024		.409 [e]		.311	-1.196 [b]	5.7
	(1.35)		(3.81)		(1.00)	(-1.28)	

Rebalancing /Liquidity Bank-Quarters	Pre-1983	281 / 216	57 % / 43 %
	Post-1982	60 / 188	24 % / 76 %

a) Dependent variable (AR) is the two-day abnormal return cumulated over the day before and the day of the earnings announcement publication date in The WSJ Index.
Independent Variables:
UNI - Unexpected Total Net Income
UIBST - Unexpected Income Before Securities Transactions
USTGL - Unexpected Securities Transactions Gains/Losses
ULSTGL - USTGL's classified as liquidity signals
URSTGL - USTGL's classified as rebalancing signals

All independent variables are per share amounts scaled by the closing share price on the day preceding the cumulation period. UIBST and UNI expectations are based on the most recent Value Line forecast. Market expectations for STGL's are assumed to be zero. t - statistics in (.); all one-tailed tests except Intercepts.

Significance levels : b - <.10; c - <.05;
d - <.01; e - <.001.

Table 10

Controls for Loan Loss Provision and Interest Rates [a)]

Coefficient Estimates : All Bank/Quarters

(4c) From Table 7	Intercept	UIBST	ULSTGL	URSTGL	Adjusted R^2 (%)
	.00028	.2954 [e]	.5720 [d]	-.0876 [d]	4.6
	(.30)	(5.64)	(2.64)	(-2.84)	

(4c3) Control for Loan Loss Provision

Intercept	NUIBST	ULLP	ULSTGL	URSTGL	
.0002	.3049 [e]	- .3289 [e]	.5808 [d]	-.0944 [d]	4.7
(.26)	(5.77)	(-5.65)	(2.68)	(-3.02)	

(4c4) Control for Interest Rates

Intercept	UIBST	RFIBST	ULSTGL	URSTGL	
.0006	1.078 [e]	- 5.71 [e]	.7081 [d]	-.1166 [e]	5.6
(.20)	(4.00)	(-2.96)	(3.21)	(-3.62)	

(4c5) Control for both Loan Loss Provision and Interest Rates

Intercept	NUIBST	ULLP	RFNIBST	ULSTGL	URSTGL	
.0002	.8395 [e]	-.447 [e]	- 3.11 [d]	.6952 [d]	- .087 [d]	5.9
(.20)	(4.93)	(-6.57)	(-3.30)	(3.19)	(-2.79)	

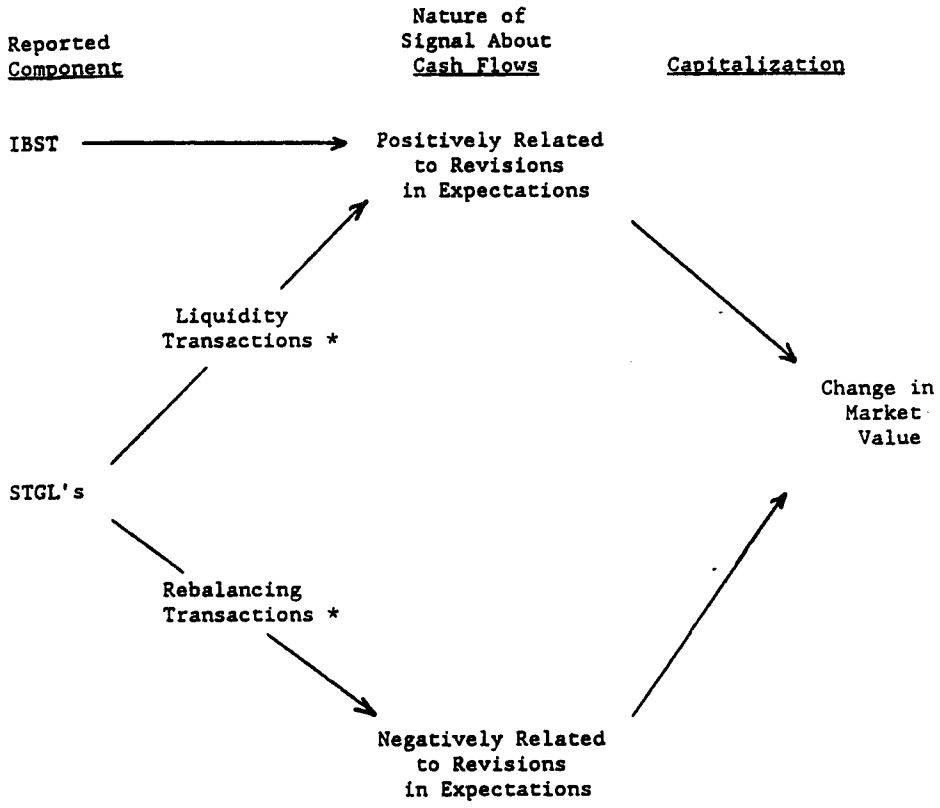
a) Dependent variable (AR) is the two-day abnormal return cumulated over the day before and the day of the earnings announcement publication date in The WSJ Index.
Independent Variables:
UIBST - Unexpected Income Before Securities Transactions,
ULLP - Unexpected Loan Loss Provision (random walk expectation),
UNIBST - Unexpected IBST net of ULLP,
RFIBST - Yield on Intermediate T-Bonds X UIBST,
RFNIBST - Yield on Intermediate T-Bonds X UNIBST,
ULSTGL - USTGL's classified as liquidity signals,
URSTGL - USTGL's classified as rebalancing signals.

All independent variables are per share amounts scaled by the closing share price on the day preceding the cumulation period. UIBST and UNI expectations are based on the most recent Value Line forecast. Market expectations for STGL's are assumed to be zero. t - statistics in (.); all one-tailed tests except Intercepts.

Significance levels: b - <.10; c - <.05;
d - <.01; e - <.001.

Figure 1

Valuation Signals of the Components of Bank Income [a)]



a) IBST : Income Before Securities Transactions
STGL's : Securities Transactions Gains and Losses

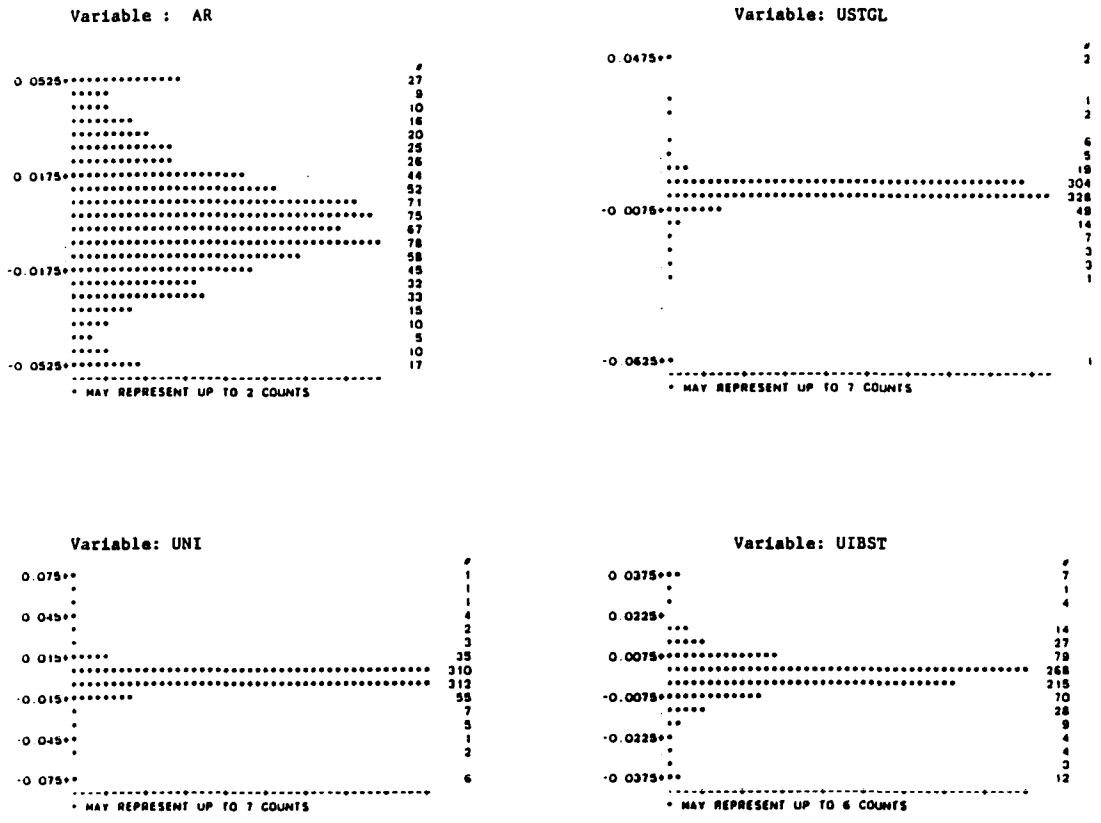
* Factors affecting different portfolio transactions (see Table 3):

Investment Yields Relative to Market Rates (Gains or Losses)
Effective Tax Rates
Bank Capitalization

Securitites transaction losses for tax-paying banks are predicted to signal rebalancing.

Figure 2

Histograms for Regression Variables [a)]



a) AR (dependent variable) is the two-day abnormal return cumulated over the day before and the day of the earnings announcement publication date in The WSJ Index,
Independent Variables:
UNI - Unexpected Total Net Income
UIBST - Unexpected Income Before Securities Transactions
USTGL - Unexpected Securities Transactions Gains/Losses

All independent variables are per share amounts scaled by the closing share price on the day preceding the cumulation period. UIBST and UNI expectations are based on the most recent Value Line forecast. Market expectations for STGL's are assumed to be zero. For scaling purposes, variables have been truncated at two standard deviations from the mean. See Table 5 for extreme values.

CHAPTER III

OVERVIEW AND EXTENSIONS

The purpose of this research was to provide evidence on the information content of bank accounting income and its components. The analyses and empirical tests have focused on two bank earnings components (IBST and STGL) which have been reported in a manner that would suggest that bank earnings, when disaggregated into these two components, might have incremental information content relative to the total income measure. The results presented in Section 4 of Chapter II are consistent with this prediction. Furthermore, the empirical findings suggest that the differential valuation relevance of "liquidity" and "rebalancing" STGL signals is a strong candidate for explaining the information content of that earnings component and the apparent usefulness of the IBST/STGL earnings partition at the announcement of quarterly bank earnings.

As noted in the introductory chapter, this study extends prior research that has investigated the information content of accounting disclosures to an institutionally rich industry which has received relatively little attention in prior studies. In addition, the unique aspects of the bank reporting environment were exploited to design more powerful tests of the information content of bank earnings components compared to studies that examine earnings components across

industries. Two areas of future research are suggested which extend the present line of inquiry into financial reporting in the banking industry.

One issue not directly addressed in this study concerns the relative quality of the cash flow signals provided by the IBST and STGL earnings components. For example, Value Line reports suggest frequently that STGL's are of lower quality compared to the earnings signals contained in IBST. One interpretation of these statements is that the earnings shocks for the components exhibit differential persistence as signals of future cash flows (Lipe, 1986) providing a further justification for disaggregated reporting of bank earnings numbers. Thus, one area of future research would extend the analysis in the second essay to an association or long-window empirical context. In such a setting, where differences in the accuracy of estimates for IBST and STGL market expectations are not expected to be as severe, we can conduct more unambiguous tests of the relative information content of the IBST and STGL earnings signals.

A second area of future research would involve a further investigation of the effects of contextual factors such as interest rates on the information content of bank earnings. The volatility of market interest rates and elimination of interest rate ceilings in recent years have exposed banks to increased interest rate risk. In response, banks have frequently hedged this risk using financial futures contracts (Baughn et al., 1988). In 1984, the FASB adopted SFAS No. 80 (FASB, 1984) which requires banks to adopt mark-to-market accounting for macro-hedges which are commonly used by banks to hedge

general interest rate risk. An additional study could investigate the possible effect(s) of that accounting standard on the information content of bank earnings.

This issue is of potential interest because it concerns the accounting for transactions which should reduce the variability of cash flows to the bank. However, the empirical results in Francis (1989) indicate that the reported earnings under SFAS No. 80 exhibit increased variability (as warned by some SFAS No. 80 opponents) relative to prior allowable accounting methods. Hence, it is not evident what effect hedging transactions and their attendant accounting treatment would have on the informativeness of bank earnings.[1] Since the effects of this accounting method are expected to be context-specific (i.e, dependent on interest rates and banks' responses to them), this extension would allow us to exploit the institutional knowledge gained in this dissertation concerning bank reporting environments to provide evidence about the contextual nature of the information content of an additional set of bank financial disclosures.

1. Francis (1989) did not assess the information effects of this accounting treatment. The model by Choi and Salamon (1988) provides one way to interpret the effects of hedging transactions. For example, holding noise in accounting signals (accounting method) constant, their model predicts that firms with lower variance in cash flows will have smaller ERC's.

APPENDIX A

THE CHANGE TO ONE-STEP REPORTING AND BANK REPORTING PRACTICES

The purpose of this appendix is two-fold. Section 1 provides additional background on alternative bank income statement formats and the debate over the 1983 SEC mandated change from a "two-step" to a "one-step" reporting format. Section 2 describes bank income reporting practices and documents why the change in reporting format should not have affected the informational usefulness of the bank income components. This reporting discussion also helps justify the specification of the event tests conducted in Chapter II.

1. One-Step vs. Two-Step Reporting Formats

As noted in Chapter I, prior to 1983, banks reported the STGL and IBST income components in separate sections of a "two-step' income statement. In 1983, the SEC mandated a change to a "one-step" bank income statement format. Table 1 (at the end of Chapter I) contains a comparison of the one- and two-step reporting formats. Note in the two-step format that STGL's were reported net-of-tax after IBST while in the one-step statements, STGL's are reported as a subcomponent within other operating revenues.[1] Like other bank disclosure changes adopted in recent years, the SEC received numerous comments concerning

1. The FASB has recently adopted a similar one-step reporting format for some insurance company income statements (FASB, 1987).

this reporting change. In fact, of the reporting changes adopted in 1983 for banks, the Commission received the most comments in opposition to this change in income statement format.[2]

Commentators on the reporting change adopted different perspectives concerning the change's impact on the usefulness of the reported bank income numbers. The segregation within two-step reports was supported for a number of years because STGL's were held to represent transactions that are different from the transactions reflected in IBST.[3] For example, Wachovia Bank and Trust Co. as part of a one and one-half page discussion in its 1983 annual report explaining the effects of the reporting change highlighted the differences between the two formats (a comparison similar to Table 1 was included as part of this discussion):

> " The two-tier format enabled the user of the financial statements to more readily distinguish a bank's earnings

---

2. These other revisions concerned the supplemental statistical data required under Industry Guide 3 (SEC, 1983a). The one-step reporting change can be viewed as part of the recent trend in bank disclosure changes - changes which have received considerable attention because they have been adopted during a period of deregulation for the banking industry. Controversy has surrounded both the freedom banks should be permitted in the deregulated financial services market and the role that financial disclosures should play in making banks more accountable for their riskier activities vis-a-vis the deposit insurance system. Policy makers have argued that banks should disclose more information and provide disclosures that are more comparable to those released by nonbank entities if the banks are to enjoy the freedom of deregulated markets. See Coulson et al. (1983); Conover (1982); Eisenbeis and Gilbert (1983); Isaac (1982) for a more complete discussion of these disclosure issues and Hagerman (1975); Beaver et al., (1986) and Warfield (1988) for empirical tests concerning the impact of some of these changes.

3. The nature of these transactions is discussed more fully in Section 1 of Chapter II.

> achieved through its normal operations (IBST) while also seeing the impact to earnings of the completely optional investment securities transactions (net income)."(1983 Annual Report, p. 10)

The view expressed by Wachovia seems aligned with the idea that the IBST and STGL components are different enough to warrant a two-step format and that combining them into one income statement section may reduce the usefulness of both components.[4]

In support of the one-step reporting format, the SEC cited arguments by some commentators that there was no conceptual basis for reporting securities transactions in a manner that implies that the gains or losses represent something other than operating income. Since most banks invest in securities as part of their interest-earning portfolio of loans and investments, STGL's are expected to arise in the normal course of those activities. Hence, the SEC held that a large proportion of the gains and losses associated with banks' investment transactions can be viewed similarly to the costs of placing and processing other investments (e.g., loans).

The SEC further argued that:

---

4. In fact, in one-step reports (column 2 of Table 1) IBST is no longer a reported component in bank statements. The on-going reporting practices of investor information services tend to support the banks' contention of the importance of the segregation of STGL's which was explicit in the two-step regime. For example, following the change to one-step reporting, Compustat (1987) has continued to use prior income definitions and subtotals in their data base. In addition, Value Line reports commonly provide information on STGL's separtely in earnings per share figures for the banks followed by the service.

> "... this format [two-step] detracts from the importance of net income which should be of primary importance to investors." (SEC, 1983a, p.674)

This statement implies that investors may not find information on the components as being useful. In adopting the change the SEC also emphasized that other information disclosed in the financial statements related to the composition, yield, and maturity of the investment portfolio should provide users with information necessary to assess management's investment policies (SEC, 1983a).

An efficient market perspective is adopted in this research. As will be discussed below, most banks have disclosed essentially the same income component data both before and after the format change. Since the form of presentation should not affect the informational usefulness of the reported income numbers (Beaver, 1973), the tests do not directly assess whether the reporting change affected the information content of the bank earnings numbers[5,6] For the

---

5. Beaver (1973), arguing from an efficient market perspective, suggested that regulators should be concerned primarily with ensuring that the relevant information is provided somewhere in the reports contemporaneously. In some respects, by emphasizing the supplemental information contained elsewhere in the reports, the SEC position appears to be consistent with an efficient market perspective. However, while the Commission argued for the overall adequacy of the complete information set concerning the investment portfolio, the SEC indicated that statement users may ignore STGL's depending on where they are located in the statements (see quote above). By maintaining separate line reporting and at the same time emphasizing the bottom-line net income number, the commission seems to provide conflicting arguments about the usefulness of bank income components.

6. This paper does not examine the reasons why banks opposed the one-step change and the SEC supported it. Further research in this regard, which would rely on a different research design, is planned to investigate whether the change to the one-step format might have

empirical tests that measure the market reaction to the release of bank income information, it is necessary to identify when market participants first receive income component data. Thus, the discussion of bank income component disclosure practices in the next section also helps justify the specification of these empirical tests.

2. Bank Income Disclosure Practices

Like many other firms that are subject to SEC and other security exchange disclosure rules, banks report quarterly and annual earnings information primarily at two points in time - at the time of the preliminary earnings announcement and when they release their complete financial reports.[7] At the latter financial statement date, banks provide shareholders and the SEC with complete quarterly/annual financial reports which include the balance sheet, income statement, statement of cash flows, financial statement footnotes, and (at least for annual reports) the statistical disclosures required under SEC Industry Guide 3. These statistical disclosures include investment portfolio yield and maturity information.[8] Shortly after the end of an accounting period (quarter or year) and at an earlier point in time relative to the financial statement release date, a bank will prepare

---

affected management bonuses and/or debt contracts leading bank managers to oppose the change.

7. See Thompson, Olsen and Dietrich (1987), Hoskin et al. (1986) and Wilson (1987) for some general insights into the disclosure practices for SEC registrants, including banks.

8. Under SEC Industry Guide 3 banks are required to disclose the types of securities held (e.g. governments, corporates), the maturity structure of the portfolio and the average yield on the various components (SEC, 1983b). Some banks include Guide 3 data in quarterly filings.

a news release that contains management's discussion of the operating results for that period. In addition, the bank typically provides a condensed income statement that is less detailed than the earnings report contained in the complete financial statements.

A survey of bank earnings news releases indicates that banks have provided a varying amount of detail about the components of earnings at this earlier point in time.[9] Some banks only release a bottom line number while others release a detailed income statement (and in some cases), a balance sheet. For example, Table A-1 shows a comparison for Wachovia Bank's news release items both before and after the change from two-step to one-step reporting that is representative of the component detail provided by a number of banks in their earnings releases.

Especially noteworthy for the present research is the fact that STGL's is one bank income component that was, and continues to be, reported separately in the earnings releases of banks in the one-step period. Note that although STGL's became part of Other Operating Income under one-step rules, Wachovia chose to voluntarily report it as a separate component in their earnings release.[10] Although banks

---

9. A reporting survey was sent to 129 banks with data in the Bank Compustat file. These banks were also asked to submit copies of earnings releases. 54 banks (or 40% of these 129) responded to the survey and 39 of these 54 submitted news releases. News release detail for an additonal 22 banks included in the market reaction tests in Chapter II was verified based on a perusal of WSJ and/or newswire data bases (see below).

10. 32 (or 52%) of the news releases contained details on STGL's. Provision for Loan Losses is an additional component which commonly receives special note in the preliminary earnings release (in 90% of the news releases). In some cases, these releases have also contained

report earnings components in their preliminary news releases, one empirical question of interest concerns whether the income component information is made available to the market.

One way to assess the extent to which income component information is disseminated to the market at the preliminary earnings announcement date is to compare the information contained in the news releases prepared by banks to the information carried on the newswires used by market participants to receive news release data. PR Newswire (PRN) is one widely used source (Thompson, et al., 1987).[11] This newswire communicates the entire news release text including appended statements (see Table A-1) and schedules to over one thousand newsrooms, brokerage houses, and other parties designated by the releasing firm.

For a subsample of the banks used in this study, the data contained in these newswire communications included the text of management's discussion of the current period's results and a condensed income statement that for many banks contained income component detail comparable to that shown in Table A-1. Furthermore, in many cases a comparative condensed balance sheet as well as commonly reported financial ratios were also included. Thus, it would

---

comparative condensed balance sheets as well as financial ratio data. Although not all banks release earnings statements that are as detailed as those shown in Table A-1, material component amounts (e.g., STGL's and Loan Loss Provision) are frequently discussed in the written text of the news release.

11. 36 of the 54 banks responding to the reporting survey mentioned above indicated that they use PRN to disseminate their earnings release data. The remaining 18 use other newswires such as Reuters, Business Wire, or the Dow Jones/ AP Wire. Many of the banks use multiple newswire outlets.

appear that detailed earnings component data as well as some other financial data are widely disseminated to market participants across the newswires at the time of the earnings release.[12]

This review of bank income disclosure practices provides two basic insights for the analysis conducted in this paper. First, most banks have initially provided earnings component information to market participants at the preliminary earnings release date. That a number of banks have continued to voluntarily release details on STGL's at this earlier point in time might be interpreted as tentative support for the usefulness of the IBST and STGL components relative to the total income measure. The market tests conducted in Chapter II investigate the underlying valuation rationale for the STGL and IBST component distinctions in bank income statements.

---

12. One reason to believe that the data is not widely disseminated to the market is the disclosure practices of the Wall Street Journal (WSJ). Table A-2 displays representative contents of banks' earnings announcements in the WSJ for two banks before and after the one-step reporting change. As can be seen in the second column of the table, following the change to one-step reporting, detail on STGL's was not included in the WSJ announcements (a similar comparison was confirmed for all 48 banks included in the market reaction tests in this paper). Preliminary analysis also indicates that the income component detail shown in Table A-1 is not included in the data on the Broad Tape (which is many times the source for WSJ stories). Hence, it is unclear how widely this STGL component data has been disseminated via the Broad Tape or WSJ in the one-step reporting regime. If Dow Jones reporters who prepare stories to be communicated over the Broad Tape or in the WSJ use a source like the PRN, it still would appear that they edit the detailed material out of their final stories. That the Dow Jones reporters are likely to use PRN was confirmed in a phone conversation with a representative of PRN who indicated that the Broad Tape is one of the news rooms to receive PRN releases. In addition, an analysis of times on PRN and Broad Tape releases indicates that PRN normally releases the news earlier than the Broad Tape.

Secondly, this discussion provides some justification for the specification of the empirical tests that were used to assess the valuation relationships of interest in this study. For example, since in an event context a market reaction would only be expected at the time of the release of new component information, it is important to identify if new information is released to the market at a particular date. Specifically, when it was not certain that a bank provided details on STGL's in its preliminary earnings release, it was excluded from the tests. Furthermore, this review suggests the information that the market may use to form expectations for the earnings components (e.g., supplemental Guide 3 disclosures related to the investment portfolio).

As a final note, this discussion might also be useful to other researchers who have assumed that appearance in the WSJ or on the Broad Tape constitutes a suitable proxy for the time when the market first observes accounting or other firm-specific information. The investigation conducted here suggests that firms (at least banks) are releasing detailed financial data beyond total earnings at the preliminary earnings announcement date - information that might not be reflected in Dow Jones news sources. Thus, absence of an information item in a Dow Jones source may not be a sufficient criteria to rule out a possibly confounding market reaction to that information item.

Table A-1

Comparison of Income Component Detail in Bank Earnings Releases

Two-Step - Pre 12/31/83

THE WACHOVIA CORPORATION AND SUBSIDIARIES

Summary of Earnings (thousands, except per share data)	Three Months Ended June 30 1983	1982	Six Months Ended June 30 1983	1982
Wachovia Bank and Trust Company, N.A.	$20,441	$18,667	$40,527	$36,471
Parent and other member companies	1,495	857	3,650	2,495
Income before securities transactions	21,936	19,524	44,177	38,966
Securities gains (losses)	(1,534)	(5,405)	(1,563)	(8,966)
Net income	$20,402	$14,119	$42,614	$30,000

One-Step - Post 12/31/83

SUMMARY OF OPERATIONS (millions, except per share data)	Three Months Ended June 30 1988	1987	Percent	Six Months Ended June 30 1988	1987	Percent
Interest income - taxable equivalent	$426.7	$392.8	8.6	$843.9	$767.1	10.0
Interest expense	229.6	200.1	14.8	450.4	388.5	15.9
Net interest income - taxable equivalent	197.1	192.7	2.2	393.5	378.6	3.9
Taxable equivalent adjustment*	18.4	23.8	(23.0)	37.0	48.1	(23.1)
Net interest income	178.7	168.9	5.8	356.5	330.5	7.9
Provision for loan losses	15.4	66.2	(76.8)	30.1	85.2	(64.6)
Net interest income after provision for loan losses	163.3	102.7	59.1	326.4	245.3	33.1
Other operating revenue	73.1	65.4	11.7	145.9	134.2	8.7
Investment securities gains	.3	14.6		.3	15.0	
Total other income	73.4	80.0	(8.3)	146.2	149.2	(2.0)
Personnel expense	85.5	79.7	7.3	170.5	160.6	6.2
Other expense	75.0	73.5	2.1	149.5	141.9	5.4
Total other expense	160.5	153.2	4.8	320.0	302.5	5.8
Income before income taxes	76.2	29.5		152.6	92.0	65.8
Applicable income taxes (benefit)	16.8	(1.1)		34.4	12.1	
Net income	$ 59.4	$ 30.6	94.2	$118.2	$ 79.9	48.0

Table A-2

Bank Earnings as Reported in The Wall Street Journal "Earnings Digest"

Two-Step Reporting
January, 1983

BARNETT BANKS OF FLA (N)

Year Dec 31:	1982	1981
Income	$64,595,000	$45,549,000
Sec loss	7,825,000	4,368,000
Net income	56,770,000	41,181,000
Avg shares	16,398,681	13,251,811
Shr earns:		
Income	3.94	3.44
Net income	3.46	3.11
Quarter:		
Income	16,719,000	12,026,000
Sec gain	156,000	d264,000
Net income	16,875,000	11,762,000
Avg shares	16,456,041	13,612,470
Shr earns:		
Income	1.02	.88
Net income	1.03	.87

d-Loss.

One-Step Reporting
January, 1984

BARNETT BANKS OF FLA. (N)

Year Dec 31:	1983	1982
Net income	$81,909,000	$56,770,000
Avg shares	17,734,792	16,398,681
Shr earns (com & com equiv):		
Net income	4.61	3.46
Shr earns (fully diluted):		
~~Net income~~	~~4.31~~	~~3.32~~
Quarter:		
Net income	22,133,000	16,875,000
~~Avg shares~~	~~18,330,749~~	~~16,456,041~~
Shr earns (com & com equiv):		
Net income	1.20	1.03
Shr earns (fully diluted):		
Net income	1.10	98

FIRST CHICAGO CORP. (N)

Year Dec 31:	1982	1981
Income	$144,019,000	$122,144,000
Sec loss	7,234,000	3,435,000
Net income	136,785,000	118,709,000
Shr earns:		
Income	3.52	3.06
Net income	3.33	2.98
Quarter:		
Income	41,800,000	36,385,000
Sec loss	122,000	657,000
Net income	41,678,000	36,442,000
Shr earns:		
Income	.96	.91
Net income	.96	.92

a-Gain.

FIRST CHICAGO CORP. (N)

Year Dec 31:	1983	1982
Net income	$183,500,000	$136,800,000
Shr earns:		
~~Net income~~	~~3.92~~	~~3.33~~
Quarter:		
Net income	47,900,000	41,700,000
Shr earns:		
Net income	1.00	96

APPENDIX B

A REGRESSION MODEL FOR EXPECTATIONS ON STGL'S

This appendix provides details on a regression model used to form alternative estimates for the market's expectation for the amount of STGL's announced in the preliminary earnings release. As noted in Section 3 of Chapter II, if the zero expectational assumption adopted for STGL's is not reasonable, it may lead to an ill-measured unexpected STGL variable for use in the empirical tests. This could result in less powerful tests of information content for the STGL earnings component. In addition, inferences about the information content of the IBST or NI components may also be affected since in some instances expectations on those earnings components will depend on STGL expectations (e.g., in the pre-1983 period, NI expectections would be the Value Line forecast plus the STGL expectation).

The institutional discussion in Section 1 of Chapter II identified a number of contextual factors that theory and prior empirical evidence suggest as being relevant for predicting STGL's. Recall from Table 3 that information about yield differentials (reflecting portfolio holding gains or losses), effective tax rates and regulatory capital ratios might be used by market participants to form expectations about the sign and/or magnitude of STGL's in a given bank/quarter. Thus, the choice and measurement of the variables

included in the following model are justified in part by this discussion.

Coefficient estimates from the following cross-sectional regression model are combined with individual bank data to form the expectation for a given bank/quarter:

$$STGL_{iq} = r_0 + r_1 HLDG_{i,\,t-1} + r_2 C_{i,q-1} (HLDG_{i,t-1}) + r_3 M_{i,q-1} [C_{i,q-1} (HLDG_{i,t-1})] + r_3 MTI_{i,t-1} DMB_q MUNI_{i,q-1} + r_4 TTI_{i,t-1} DTN_q TXBL_{i,q-1} + r_5 CSTGL_{i,q-1} + e_{iq} \quad (B1)$$

Where: q subscripts refer to quarters and t-1 subscripts refer to the year prior to quarter q. To control for heteroskedasticity, all variables are scaled by the book value of total investments at q-1.

$STGL_{iq}$ are reported STGL's for bank i in quarter q,

$HLDG_{i,t-1}$ is the difference between the book value (BV) and market value (MV) of bank i's investment portfolio as reported in its most recent annual report. When positive (BV>MV), a bank has unrealized holding losses in the portfolio and the converse when the difference is negative.

$C_{i,q-1}$ has a value of one when a bank's HLDG measure is positive and if its regulatory capital ratio is less than 5% at q-1. It has a value of zero otherwise.

$M_{i,q-1}$ is a large bank dummy variable and has a value of one for the largest 25 % of the sample banks for the quarters prior to 1983. Prior to 1983, the bank capital minimums for large banks were set at lower levels than for other less diversified banks.

$MTI_{i,q-1}$ and $TTI_{i,q-1}$ are tax incentive variables for tax-exempt (MTI) and taxable (TTI) portfolio holdings and have a value of one under the following conditions (note that these conditions may be different for the alternative investment types in a given quarter) :

- a bank is in a high effective tax status (as reflected by reporting no net operating loss (NOL) or investment tax credit (ITC) carry-forwards in its most recent (t-1) annual report) and market interest rates (described below) on that type of security have

increased or,

- a bank is in a low effective tax status (reported NOL or ITC carryforwards) and the market rates have declined.

DMB_q and
DTN_q are the year-to-date change in market interest rates on municipal (DMB) and treasury securities (DTN) since HLDG was reported at t-1. Both are computed based on the municipal and short term treasury bond yields in the Moody's Bond Survey.

$MUNI_{i,q-1}$ and
$TXBL_{i,q-1}$ are the book values of tax-exempt and taxable investments respectively for bank i at q-1,

$CSTGL_{i,q-1}$ are the cumulative year-to-date STGL's for bank i at quarter q-1 and,

e_{iq} is a regression disturbance term assumed to be i.i.d. normally distributed.

The following intuition is provided for the model in (B1). HLDG is a direct measure of holding losses or gains in a bank's investment portfolio and it reflects the maximum realizable STGL's that a bank could report if it sold all securities in the portfolio at that time. Thus, the coefficient on HLDG reflects on average the portion of these unrealized gains or losses that are subsequently realized as STGL's. It is predicted to have a negative sign.

C (HLDG) and M [C (HLDG)] are included to control for the constraints of regulatory capital requirements for bank investment dispositions. Banks that are closer to the minimums are less likely to realize losses and hence we expect low capitalization banks to have larger amounts of holding losses in their portfolios ($r_3>0$). Since larger banks were allowed to maintain lower regulatory capital ratios prior to 1983, the second capital variable allows for a different relationship between large banks' STGL's and HLDG when holding losses

exist in the portfolio. The sign of the coefficient should be negative.

Since data on HLDG is only available at the annual report date, the tax incentive/ interest rate change variables are included to estimate the change in a bank's HLDG since the beginning of the year and hence the increased or decreased likelihood of STGL's on investment dispositions. This change in HLDG is approximated based on changes in market interest rates multiplied by the book values of the relevant investment types. Assuming that portfolio yields are relatively stable, when market rates rise, holding losses increase (and the converse for rate declines). Banks with higher effective tax rates have more incentive to sell when market interest rates rise since the losses generate a tax rebate, (and the converse when rates decline since the bank would pay tax on the gain as ordinary income). Hence, these variables enter the model only for banks that are not at a tax disadvantage in that quarter to sell securities from the portfolio. In either case, the sign on these variables should be negative.

To control to some extent for the discretionary nature of securities transactions and for the potential mismeasurement of the variables discussed thusfar, CSTGL is included to capture a bank's propensity to realize gains or losses in the portfolio based on the STGL's reported year-to-date. Hence, conditional on a bank's HLDG and interest rate change variables, the sign and magnitude of the year-to-date STGL's (CSTGL's) are predicted to be positively related to reported STGL's in the current quarter.

Consistent with the results in the prior literature (e.g., Scholes et al. (1988) and Moyer (1988), preliminary support for these variables in a model to predict STGL's in a given bank/quarter is contained in Table B-1. The coefficient estimates in that table are from a regression using all bank data in the test period. Note that all of the coefficients have the predicted sign and all but the estimates for the taxable interest rate change variable and the large bank HLDG variables are significant at p-values less than .05 (their significance levels are .16 and .12 respectively). Since the estimates in Table B-1 are based on all quarterly data within the 1980-1985 test period, they are not valid for use in estimating the market's expectation of STGL's in a given bank/quarter. This is because data from later periods that would not have been available to the market would be used to estimate expectations in earlier quarters.

Thus, to estimate expectations for a given bank at the time of the earnings announcement for quarter q, the model in (B1) was estimated on cross-sectional data from the four quarters preceding quarter q. For example, coefficients for the third quarter of 1983 were estimated using data from the third quarter 1982 to the second quarter 1983. These cross-sectional coefficient estimates (r_0 through r_5) were then combined with the relevant individual bank data for the third quarter of 1983 to generate individual bank forecasts for STGL's for that bank/quarter. Note that only ex-ante data is used to estimate the model. This procedure generates 24 sets (one set for each quarter from 1980-1985) of coefficient estimates. Table B-2 summarizes the results of these regressions.

The results in Table B-2 indicate that the model produces less consistent estimates when estimated on the sub-period data. While the means of coefficient estimates have the predicted sign in the majority of cases, only the HLDG, C(HLDG) and CSTGL variables are consistently significant. While the mean R^2 across the sub-periods is higher than the all-period estimation, four of the sub-period models have little explanatory power at conventional significance levels.

These results provide preliminary empirical evidence that is consistent with the Value Line contention (noted in Section 3 of Chapter II) that it is difficult to predict the results of securities transactions for a given bank/quarter. While a number of variables are supported as being relevant to predicting these transactions, it would appear difficult to specify a relationship that holds in general both across banks and time periods. To the extent that the choice and measurement of the variables used in (B1) are similar to the process that the market might use to estimate a bank's STGL's in a given quarter, these results suggest that a zero expectation specification may be a reasonable proxy for the market's STGL expectation compared to the regression model estimates.

A comparison of the forecast errors from the regression model and those based on the zero market expectation assumption provides additional support for this conclusion. Table B-3 compares the distributions of signed, unsigned and squared forecast errors for these two expectation assumptions. Note that the mean for the unsigned and squared forecast errors are larger for the regression model. In addition, an examination of the percentiles for each of the

alternative unsigned measures indicates that the regression model errors are generally larger in magnitude relative to the zero model throughout the distribution. A comparison of the standard deviation of the signed errors across all positive and negative observations also suggests that the forecast error from the zero model have a marginally tighter distribution, particularly for positive values.

In summary, the results in Table B-3 suggest that the two expectation assumptions yield equally well specified estimates of the market's expectations of STGL's for a given bank/quarter. Furthermore, use of either specification in the OLS empirical tests reported in Section 4 of Chapter II yielded essentially the same pattern of results with the regression model specification leading to generally weaker results.

Table B-1

Regression Model STGL Expectations - Preliminary Results [a]

Variable	Coefficient Estimates (Standard Errors)
Intercept	.0004 [c] (.00011)
HLDG	- .00792 [c] (.00135)
C (HLDG)	.00430 [b] (.00216)
M [C (HLDG)]	- .00311 (.00261)
MTI[DMB(MUNI)]	- .03032 [b] (.01663)
TTI[DTN(TXBL)]	- .01262 (.01257)
CSTGL	.14348 [c] (.01842)
Degrees of Freedom	1295
Adjusted R^2	9.1%
F (p value)	22.71 (.001)

a) Estimates based on pooling of cross-sectional and time series data from 1979 to 1985. Dependent variable is STGL's. All variables are scaled by the book value of the investment portfolio at q-1.

HLDG is the difference between the book and market value of a bank's portfolio at the beginning of the year - it is a measure of holding gains and losses in the portfolio,

C(HLDG) and M [C(HLDG)] are controls for regulatory capital constraints,

MTI[DMB(.)] and TTI[DTN(.)] estimate the change in HLDG since the beginning of the year as a function of changes in market interest rates. These variables only enter the model for banks that have tax advantages for securities dispositions (MTI,TTI),

CSTGL is year-to-date STGL's.

Significance levels : b - <.05; c - <.01.

Table B-2

Regression Model STGL Expectations - Sub-Period Summaries [a)]

Variable	Mean Coefficient (Std Error of Mean)	Number/ % Correct Sign (significant at <.15)
Intercept	.00016 (.00012)	Not Applicable
HLDG	- .00991 (.00321)	21 / 87.5% (15 / 71.4%)
C (HLDG)	.00755 (.00215)	20 / 83.3% (16 / 80%)
M [C (HLDG)]	- .00207 (.00075)	11 of 12 / 91% (-)
MTI[DMB(MUNI)]	- .00064 (.0153)	12 / 50% (4 / 33%)
TTI[DTN(TXBL)]	- .01418 (.00971)	15 / 62.5% (6 / 40%)
CSTGL	.23678 (.0356)	21 / 87.5% (16 / 76%)
Mean : Degrees of Freedom	179	In only 6 cases was a coefficient significant with the wrong sign.
Adjusted R^2	11.5%	

20 of 24 models are significant at <.05.

a) Means of coefficient estimates based on data from the four quarters preceding expectation forecast quarter. Dependent variable is STGL's. All variables are scaled by the book value of the investment portfolio at q-1.

HLDG is the difference between the book and market value of a bank's portfolio at the beginning of the year - it is a measure of holding gains and losses in the portfolio,

C(HLDG) and M [C(HLDG)] are controls for regulatory capital constraints,

MTI[DMB(.)] and TTI[DTN(.)] estimate the change in HLDG since the beginnning of the year as a function of changes in market interest rates. These variables only enter the model for banks that have tax advantages for securities dispositions (MTI,TTI),

CSTGL is year-to-date STGL's.

Table B-3

Comparison of Alternative STGL Expectation Specifications [a)]

Regression Model Forecast Errors

	Signed	Unsigned	Squared
Mean	.000126	.001268	.000769
Standard Deviation	.002772	.002468	.00763
Percentiles:			
100	.040251	.04210	.177259
75	.000786	.00134	.000180
Median	.000210	.000648	.000042
25	- .000452	.000304	.000009
0	- .042102	<.000001	<.000001

Zero Expectation Assumption Forecast Errors

	Signed	Unsigned	Squared
Mean	- .000184	.001027	.000734
Standard Deviation	.002704	.002508	.00783
Percentiles:			
100	.042663	.04286	.18369
75	.000165	.001032	.000106
Median	- .000003	.000290	.000008
25	- .000508	.000045	.000001
0	- .04286	0	0

a) Regression model forecast errors are computed by deducting the STGL expectation (based on the cross-sectional coefficients summarized in Table B-2 combined with individual bank data for the relevant period) from actual bank STGL's in that quarter. The zero model assumes that the STGL expectation is zero.

Signed errors are the actual errors; unsigned refer to the absolute value of the signed errors and squared errors are the signed errors squared multiplied by 100.

REFERENCES

Baughn, W., T. Storrs, and C. Walker The Bankers' Handbook; Dow Jones, Irwin; Homewood, Illinois (1988).

Beaver, W. H. "What Should Be the FASB's Objectives?" Journal of Accountancy (August, 1973) pp. 49-56.

_____, _____, Clarke, R. and W. Wright "The Association Between Unsystematic Security Returns and the Magnitude of Earnings Forecast Errors," Journal of Accounting Research (Autumn, 1979) pp. 316-340.

_____, _____ Financial Reporting: An Accounting Revolution, Prentice Hall, Englewood Cliffs, N.J. (1981).

_____, _____, C. Eger, S. Ryan, and M. Wolfson "Financial Reporting, Supplemental Disclosures, and the Structure of Bank Share Prices," Unpublished Working Paper, Stanford University, June 1986.

Belsley, D., E. Kuh, and R. Welsch Regression Diagnostics; John Wiley and Sons; New York (1980).

Bernard, V. "Cross-Sectional Dependence and Problems of Inference in Market-Based Accounting Research," Journal of Accounting Research (Spring, 1987) pp.1-48.

_____, __, and T. Stober "The Nature and Amount of Information Reflected in Cash Flows and Accruals," Working Paper, The University of Michigan (October, 1987).

Bowen, R. "Valuation of Earnings Components in the Electric Utility Industry," The Accounting Review (January, 1981) pp. 1-22.

Breusch, T. and A. Pagan "A Simple Test for Heteroskedasticity and Random Coefficient Variation," Econometrica (1979) pp. 1287-1294.

Brown, L., P. Griffin, R. Hagerman and M. Zmijewski "Security Analysts Superiority Relative to Univariate Time Series Models in Forecasting Quarterly Earnings," Journal of Accounting and Economics (April, 1987a) pp. 61-88.

Brown, L., P. Griffin, R. Hagerman and M. Zmijewski "An Evaluation of Alternative Proxies for the Market's Expectation of Earnings, " Journal of Accounting and Economics (December,1987b) pp. 159-94.

Choi, S. and G. Salamon "Accounting Information and Capital Asset Prices," Working Paper, Vanderbilt University (March, 1988).

Collins, D. W., and S.P. Kothari "An Analysis of the Intertemporal and Cross-Sectional Determinants of Earnings Response Coefficients," Journal of Accounting and Economics; Forthcoming, (1989).

Compustat (1987) Bank Compustat, Standard and Poors Compustat Services, 1987.

Conover, C.T. "Disclosure in an Unregulated Environment," (remarks to the SEC Major Issues Conference, 10/7/82) Quarterly Journal of the Comptroller of the Currency (December 31, 1982) pp.29-30.

Coulson, E., G. Gilbert, J. Wooden and T. Paluszek "Disclosure," Economic Review of the Federal Reserve Bank of Atlanta (November, 1983) pp. 62-79.

Easton, P. and M. Zmijewski "Cross-Sectional Variation in the Stock Market Response to the Announcement of Accounting Earnings," Forthcoming, Journal of Accounting and Economics (1989).

Eisenbeis, R. and G. Gilbert " Market Discipline and the Prevention of Bank Problems and Failures," Issues in Bank Regulation (Winter 1985) pp. 16-23.

FASB (1984), "Accounting for Futures Contracts," SFAS No. 80, Stamford, Conn. (August, 1984).

FASB (1987) "Accounting and Reporting by Insurance Enterprises for Certain Long Duration Contracts and the Realized Gains and Losses from the Sale of Investments," SFAS No. 97, Stamford, Conn. (December 31, 1987).

Flannery, M. and C. James (1984) "The Effect of Interest Rate Changes on the Common Stock Returns of Financial Institutions," Journal of Finance (September, 1984a) pp. 1141-53.

Foster, G. "Valuation Parameters of Property-Liability Companies," Journal of Finance (June, 1977).

Francis, J. "The Effect of FASB No. 80 on Earnings Variability," Working Paper, Duke University (1989).

Gelfand, M. and G. Hanweck "The Effects of Tax Reform on Banks," The Bankers Magazine (January-February, 1986) pp. 59-66.

Hagerman, R. "A Test of Government Regulation of Accounting Principles," The Accounting Review (October, 1975).

Hoskin, R.E., J. Hughes and W. Ricks "Evidence on the Incremental Information Content of Additional Firm Disclosures Made Concurrently With Earnings," Journal of Accounting Research (Supplement, 1986) pp. 1-32.

Ibbotson, R. and R. Sinquefield Stocks, Bonds, Bills and Inflation: The Past and the Future; (Financial Analysts Research Foundation, Charlottesville, Va. , 1985).

Isaac, W. "Instilling Discipline in the Banks," New York Times (April 8, 1983) Sec. III, p.3.

Johnson, F. and R. Johnson Commercial Bank Management, Dryden Press, Chicago (1985).

Johnston, J. Econometric Methods; McGraw-Hill, New York (1984).

Larcker, D. "Short Term Compensation Contracts and Executive Expenditure Decisions: The Case of Commercial Banks," Journal of Financial and Quantitative Analysis (March, 1987) pp. 33-50.

Lev, B. and J. Ohlson "Market-Based Empirical Research in Accounting: A Review, Interpretation and Extension," Journal of Accounting Research (Supplement, 1982) pp. 249-322.

Lipe, R.C. "The Information Contained in the Components of Earnings," Journal of Accounting Research (Supplement, 1986) pp. 37-64.

Litzenberger, R. and C. Rao "Estimates of the Marginal Rate of Time Preference and Average Risk Aversion of Investors in Electric Utility Shares," Bell Journal of Economics and Management Science (Spring, 1971).

Miller, M. and F. Modigliani "Some Estimates of the Cost of Capital in the Electric Utility Industry," American Economic Review (June, 1966).

Moyer, S. "Capital Adequacy Ratio Regulations and Accounting Choices," Working Paper; The University of Washington (January, 1988).

Myers, S. "Determinants of Corporate Borrowing," Journal of Financial Economics (1977) 5: pp. 147-175.

Ohlson, J. "Price-Earnings Ratios and Earnings Capitalization under Uncertainty," Journal of Accounting Research (Spring, 1983) pp. 141-154.

Peek, J. and J. Wilcox "Tax Rates and Interest Rates on Tax-Exempt Securities," New England Economic Review, Federal Reserve Bank of Boston (January-February, 1986) pp.29-41.

Rayburn, J. "The Association of Operating Cash Flows and Accruals With Security Returns," Journal of Accounting Research (Supplement, 1986) pp. 112-33.

Scholes, M., G.P. Wilson, and M. Wolfson "Tax Planning, Regulatory Capital Planning, and Financial Reporting Strategy for Financial Institutions," Stanford University Working Paper (July, 1988).

SEC, (1983a) "Revision of Financial Statement Requirements and Industry Guide Disclosure for Bank Holding Companies," SEC Docket (March, 1983).

SEC (1983b) "Revision of Industry Guide Disclosures for Bank Holding Companies," SEC Docket (August, 1983).

Tarhan, V. "Unanticipated Interest Rates, Bank Stock Returns, and the Nominal Contracting Hypothesis," Journal of Banking and Finance (11) 1987, pp. 99-115.

Thompson, R.B., C. Olsen and R. Dietrich "Attributes of News About Firms: An Analysis of Firm-Specific News Reported in the Wall Street Journal Index," Journal of Accounting Research (Autumn, 1987) pp. 245-274.

Warfield, T. "An Examination of the Economic Consequences and Information Content of Bank Foreign Exposure Disclosures, " Working Paper; The University of Iowa (September, 1988).

Watts, R. and J. Zimmerman Positive Accounting Theory, Prentice Hall, Englewood Cliffs N.J. (1986).

Wilson, G.P. "The Incremental Information Content of the Accrual and Funds Components of Earnings After Controlling for Earnings," Accounting Review (April, 1987) pp. 293-322.