

The Relationship Between Fixed Asset Liquidation Value And Market Capitalization

T. Maurice Lockridge, Marshall University, USA
Gary Saunders, Marshall University, USA
Uma Sridharan, Lander University, USA

ABSTRACT

This study examines the relationship between the liquidation values of a firm's fixed assets and the firms' market capitalization. The significance of this relationship is demonstrated by comparing it with the relationship between the book value of a firm's fixed assets and the firm's market capitalization. A stronger, or enhanced, relationship for liquidation values to market capitalization indicates it's usefulness for decision making purposes.

Keywords: Book value, Firm book value, Firm liquidation value, Firm market capitalization, Firm market value, Fixed asset, Liquidation value, Market capitalization, Market value, Value-relevance

INTRODUCTION

After Modigliani and Miller (1958) demonstrated that the value of the firm is equal to the value of its assets, irrespective of its financing structure, investors and creditors have shown increased interest in the financial statement value of a firm's assets. Financial reporting is intended to provide information that is useful to investors and creditors in making business and economic decisions (SFAC #1, FASB 1978). Although financial accounting models are not designed to directly measure the market value of a business enterprise, it is desirable that the information they provide be useful to anyone who wishes to estimate a firm's market value (FASB 1978).

Accounting information (principally that related to earnings) is the basis of most financial analysis of the market value of business enterprises. Occasionally, earnings-based analysis results in estimated market values that are below the true liquidation value of the firm. The most recent anecdotally known examples occurred during the 2002 era dot.com decline when some firms' market value fluctuated below their net cash-on-hand position. This situation can result in the acquisition and liquidation of a firm, with abnormal gains accruing to those with knowledge of the true liquidation value.

This paper investigates the relationship between the liquidation value of a firm's fixed assets and the firm's market capitalization. Book value has served as a reasonable predictor of market capitalization in numerous accounting and financial research studies, and this study offers an alternative predictor which exhibits an enhanced relationship. For this study, liquidation value is defined as the price that is reasonably attainable if an asset's sale is required within a relatively short period of time (an accounting cycle, or one year).

LITERATURE REVIEW

Subramanyam and Wild (1996) examined the relationship of persistence of revisions in future benefits to going concern assumptions. Subramanyam and Wild hypothesized that there is an inverse relationship between earnings informativeness and an entity's probability of termination. In other words, as the probability of ceasing to

be a going concern increased the information value of earnings decreased. Empirical results supported their hypothesis. Frankel and Lee (1998) used recent advances in accounting-based valuation theory to develop a new fundamental measure of a firm's equity value (V). Frankel and Lee used the model that is often referred to as the Edwards-Bell-Ohlson (EBO) valuation model (Bernard 1994), or the Discounted Residual Income valuation model (Ou and Penman 1994, Lehman 1993). The incremental change in fundamental analysis theory developed by Frankel and Lee clarifies two major problems associated with using book value (B) as a proxy for fundamental value. Those two major problems are: 1) cross-sectional differences in firm's accounting methods (especially depreciation methods), and 2) differing levels of expected profitability across firms and industry sectors.

A basic tenet of accounting theory is the underlying assumption that a firm is a going concern. If an indeterminate life span is basic to accounting theory, little thought is given to the value of the firm if operations end. However, financial studies of capital budgeting under uncertainty have demonstrated that even the simple ability to abandon a capital project has value in a multi-period analysis (Hirshleifer and Riley 1992). Whenever the abandonment value of a project exceeds the value of any one of the several possible outcomes from continuing operations, the abandonment option also reduces the variability (risk) of the project outcomes by establishing a higher floor on the project's value (Berger, Ofek, and Swary 1996; Hirshleifer and Riley 1992).

Burgstahler and Dichev (1997) hypothesized that market value is an increasing convex function of expected earnings (adaptation value) for a given level of adaptation value (expected earnings). The results of the Burgstahler and Dichev's empirical tests are consistent with the hypothesized form of the valuation relationship. However, the relationship becomes very weak when earnings are low, or nonexistent. In cases where the firm may be close to liquidation a better measure of market capitalization is needed.

Burgstahler and Dichev explicitly account for the option to adapt the firm's resources to an alternative use. Adaptation includes internal redeployment of assets to a different use or, external redeployment (liquidation) of assets. Tests of Burgstahler & Dichev's (1997) model used book value as a surrogate for adaptation value, although they acknowledge that book value is not a perfect surrogate.

Which possible adaptation value should be used in Burgstahler and Dichev's valuation model? The only adaptation value that should be worthwhile is an adaptation value that is available to the shareholders. The shareholders can force a reallocation of the company's assets by collectively selling their shares to an external entity that seeks control of the company for the purpose of reallocating the company's assets to another purpose or to liquidate the company's assets for value. Therefore, the liquidation value (LV) of the firm is considered valid for this study and is the price that is reasonably assured of being attainable if the asset's sale is required within a reasonable period of time (an accounting cycle, or one year).

RESEARCH DESIGN

Based on the preceding discussion it can be posited that a firm's market capitalization (MC) is related to its LV for a given level of expected earnings. Because short-term and financial assets are relatively liquid, their liquidation values are close to their book values. If the book value of fixed assets is replaced with the liquidation value of the fixed assets (LV_{FA}), the total assets should be a better representation of the LV for the firm.

LV_{FA} can be estimated using the relationship:
 $LV_{FA} = b_s MV_{FA}$; where
 LV_{FA} = Fixed asset liquidation value,
 b_s = coefficient of asset specificity (non-liquidity), and
 MV_{FA} = Market value of used fixed assets.

The coefficient of asset specificity (CAS) can range from zero to one, with one being very marketable (liquid). If the sample is restricted to one industry where a ready market exists for the fixed assets then the CAS can be assumed to be very close to one. That means the LV_{FA} will equal the MV_{FA} .

The market value of used fixed assets can be estimated using the factors of replacement cost of equivalent new assets and the age of the used assets. Beidleman (1973) found that age proxies for most of the major factors that affect the value of used capital assets like obsolescence, maintenance costs, and functional degradation. Beidleman's (1973) study was confirmed and expanded by Downs and Shriver (1992) and Bar-Yosef and Lustgarten (1994). Therefore, the market value of used capital assets is estimated, in this study, by dividing the replacement cost of an equivalent new asset by the estimated age in years plus one-half year. Replacement cost is represented by the historical cost multiplied by the specific asset class producer price index for the asset's average age. Average age of the fixed assets was calculated by dividing the accumulated depreciation by the average yearly depreciation expense.

Further, if an individual project's abandonment value can be demonstrated to set a lower bound on the value of the project and remove lower-valued options from consideration, then Firm Liquidation Value has *incremental* value-relevance over Firm Book Value in determining Firm Market Capitalization when Firm Liquidation Value is greater than Firm Book Value. Additionally, if an individual project's abandonment value can be demonstrated to set a lower bound on the value of the project and is considered along with other valued options, then Firm Liquidation Value has *incremental* value-relevance over Firm Book Value in determining Firm Market Value.

So, two research questions are posed. First, *a firm's MC is related to the firm's LV for a given level of expected earnings*. Second, *firm LV improves the predictability of firm book value in determining firm MC*.

METHODOLOGY

Sample selection began with the firms currently reported within the Compustat Industry Classification Codes # 4210, 4213, 4400, 4412, 4512, 4513, and 4522. These classification codes include companies principally engaged in the transportation of passengers and/or freight. A high percentage of these companies' assets consist of trucks, trailers, ships, or airplanes. These types of assets possess high multi-user adaptability and resultantly a free and fair market for liquidation. Sample selection included some firms that did not operate for the entire sampling period of the years 1991-1998. The United States Postal Service was eliminated from the SIC Code 4210 company sample initially, though missing data (i.e. Market Value) would have eliminated it later in the process. The sampling period was chosen in an attempt to eliminate the residual effects of the much more regulated environment that these industries operated in until the 1980's.

The total number of companies included in the Compustat data files included all 135 companies that reported specific data items for any annual period. Considering an eight year period, there were 1,080 observations possible. The samples were reduced by those firm observations for which all required Compustat annual data items were not reported in the year of the sampling observation. The process of reduction because of missing data was begun.

The first sample adjustment was to eliminate potential observations where the annual stock return data was missing, which left 542 observations. The second sample adjustment was to eliminate remaining potential observations where the market value and/or book value data was missing, leaving 541 observations. The third sample adjustment was to eliminate two potential observations where the liquidation value was missing because one or more data items required for its computation was missing. The fourth adjustment was to eliminate remaining potential observations where firm earnings were negative, which left 417 observations. The fifth sample adjustment before preliminary data analysis was to eliminate remaining potential observations where the calculated firm liquidation values were negative, as the firm liquidation value of a corporation to its shareholders is by definition not less than zero. This elimination is consistent with Frankel and Lee (1998), Fama and French (1996), and Burgstahler and Dichev's (1997) exclusion of firms with negative book value from their tested model's sample. This elimination left 240 complete observations.

Book Value

The book value of the firm (BV) represents the sum of the Compustat annual data items #60 'Common Equity – Total' and #35 'Deferred Taxes and Investment Tax Credit (Balance Sheet)'. This is a generally accepted metric for owner's equity used in many studies including Fama and French (1992, 1993, and 1995).

Fixed Asset Liquidation Value

As discussed earlier, because the sample is restricted to one industry where a ready market exists for the fixed assets the CAS can be assumed to be very close to one and LV_{FA} will equal the MV_{FA} . Then:

$LV_{FA} = (b_s \times \text{IDX} \times \text{HC}_{FA}) / (A + 0.5)$; where
 IDX = specific asset class price inflator index, HC_{FA} = historical cost of fixed assets, and A = estimated age of the asset (in years). The estimated age of the asset in years is calculated using the solvency ratio; accumulated depreciation/depreciation expense (Kimmel, Weygandt and Keiso 2000). The addition of 0.5 year to this ratio's divisor is an arbitrary naïve estimate of the reduction necessary to account for the tax costs of liquidating assets that for tax purposes had been depreciated using the MACRS system with a 0.5 year convention. Note that the liquidation values reflect the reality of a residual value of fixed assets that parallels book depreciation with a residual.

The historical cost of fixed assets (HC_{FA}) is proxied by the Compustat annual data item #7 'Property, Plant, and Equipment – Total (Gross)'.

Average age of the fixed assets is estimated by dividing the Compustat annual data item #196 'Depreciation, Depletion, and Amortization (Accumulated) (Balance Sheet)' by the Compustat annual data item #14 'Depreciation and Amortization'.

The specific asset class price inflator index (IDX) is derived from the *U.S. Department of Labor, Bureau of Labor Statistics, Producer Price Index – Commodities, Transportation equipment – WPU14 and Aircraft and aircraft equipment – WPU142*.

The liquidation value of the firm (LV) results from adding the estimated fixed asset liquidation value (LV_{FA}) to the book value of the firm (BV), and subtracting the value of the Compustat annual data item #8 'Property, Plant, and Equipment – Total (Net)' from the resulting value.

Firm Earnings

Firm earnings are calculated by adding Compustat annual data item #18 'Income Before Extraordinary Items' and Compustat annual data item #50 'Deferred Taxes (Income Account) and subtracting Compustat annual data item #19 'Dividends – Preferred' consistent with Fama and French.

RESULTS

Cross-sectional regressions of derived and calculated variates were applied as noted below to the relevant sample as a whole. The sample was also divided into sub-samples for testing of hypotheses as well as for the testing of measurement error by testing of validation samples.

Research question one, *a firm's MC is related to the firm's LV for a given level of expected earnings*, was tested by holding the LV_{FA} to firm market value constant. This test was performed with the following derived regression equation:

$MV = b_0 + b_1 LV + b_2 E + e$; holding earnings constant, the equation becomes
 $MV/E = b_0 + b_1 LV/E + e$; where

MV = Firm market value of equity,

LV = Firm liquidation value = Firm book value of equity modified by the net after-tax effect on book value caused by re-valuing the firm's fixed assets to their estimated fixed asset liquidation value.

E = Firm earnings defined as income before extraordinary items, plus income-statement deferred taxes minus preferred dividends (Fama and French 1992). Using the definition of firm earnings that is used by Fama and French will allow more direct comparison of results obtained.

The second research question, *firm LV improves the predictability of firm book value in determining firm MC*, was tested using the following regression equation.

$MV = b_0 + b_1 BV + b_2 LV + b_3 E + e$; holding earnings constant, the equation becomes $MV/E = b_0 + b_1 BV/E + b_2 LV/E + e$; where

BV = Firm book value of equity.

LV = Firm liquidation value = Firm book value of equity modified by the net after-tax effect on book value caused by re-valuing the firm's fixed assets to their estimated fixed asset liquidation value.

E = Firm earnings defined as income before extraordinary items, plus income-statement deferred taxes minus preferred dividends.

The sample for testing of this hypothesis will be limited to those observations where $LV > BV$. The above equation was compared to the equation with the LV/E variate removed to analyze incremental value-relevance of liquidation value over book value.

Sample Data Analysis For Market Value Regressions

Sample data analysis for two research questions began by examining the multivariate influence statistics of the most influential observations on the regression equation that tests the dependence of MV/E on the independent variables BV/E and LV/E. Four tests were selected to investigate potentially undue multivariate influence on the results of the regression. The four multivariate tests used for this stage of the analysis were the Mahalanobis distance test, the Cook's distance test, the Centered Leverage (Hat Values) test, and the Covratio statistic. While not primary at this stage of the analysis, the univariate outlier test statistic of the residual z-score is also noted. Observations were removed from the sample one at a time, and then the remaining data sample was reevaluated for changes in multivariate influence statistics and univariate outliers.

The result of the sample data analysis for market value regressions was the identification and removal of fifteen data observations as having undue influence on the regression equations. This left a sample data set containing 225 observations. This reduced data set of 225 observations serves as the basis for evaluation of the two research questions.

Results From Regression Analysis

Research question one was tested using a simple linear regression equation (Model One) with the dependent variable of market value of the firm scaled by firm earnings (MV/E) and the independent variable of liquidation value of the firm scaled by firm earnings (LV/E). As summarized in Table 1, the regression provides strong evidence of the significance and direction of the relationship as hypothesized.

Table 1
Statistical Results of Hypothesis One Testing

Statistic	Model One
n	225
Dependent variable	MV/E
Independent variable	LV/E
R	.459
R Square	.211
Adj. R Square	.207
Coefficients-	
constant	11.175
std. error _{con.}	.537
95% C. I.	10.116/12.234
LV/E	.911
std.error _{LV/E}	.118
95% C. I.	.679/1.144
t-statistics-	
constant	20.803
LV/E	7.722
p-value-	
constant	.000
LV/E	.000
Model-F-statistic	59.626
-Durbin-Watson	2.028
-condition index	2.668
Pearson Correlations	
-MV/E to LV/E	.459
Mean-Std. Dev. - MV/E	14.301/5.950
- LV/E	3.431/2.999

Research question two was tested using a three-step process. First, the long established relationship between book value and market value was retested using a simple linear regression equation (Model Two) with the dependent variable of market value of the firm scaled by firm earnings (MV/E) and the independent variable of book value of the firm scaled by firm earnings (BV/E). The results of this regression provided further evidence in support of this relationship and established a baseline to analyze the incremental value-relevance of firm liquidation value. Second, a multiple regression equation (Model Three) with the dependent variable of MV/E and the two independent variables of BV/E and LV/E was run and inspected for the significance of both independent variables. Third, the multiple regression equation was compared to the simple regression equation to detect incremental value-relevance of liquidation value over book value in determining market value. As summarized in Table 2, the comparison of the regressions provides strong evidence of the incremental value-relevance as hypothesized.

Validation And Sensitivity Tests

Additional regressions were performed for model validity and metric sensitivity assessment. In review, the sample selection began with the firms currently reported within the Compustat Industry Classification Codes # 4210, 4213, 4400, 4412, 4512, 4513, and 4522 that are principally engaged in the transportation of passengers and/or freight. This sample was chosen because of the relative ease of estimating the liquidation value of their assets without proprietary information. However, the transportation sector poses challenges to accumulating a sample for evaluation. This industry has high variability of firm size, high variability of earnings and returns (between sub-sectors and within firms over time) and varying degrees of political intrusion (regulation, subsidy, etc.) because of their impact on national commerce. All of these factors combined lead to samples for validation tests that are sub-samples of the tested regression samples.

The sample used for validation of the test of the relationship between the independent variable liquidation value of the firm and the dependent variable market value of the firm was obtained by eliminating from the regression sample all the observations without a positive stock return. This changed the sample size from 225 observations to 158 observations. The results are summarized in Table 3 (Validation Model) and compares favorably to the regression sample results (Model Three).

Table 2
Statistical Results of Hypothesis Two Testing

Statistic	Model Two	Model Three
n	225	225
Dependent variable	MV/E	MV/E
Independent variable	BV/E	BV/E , LV/E
R	.473	.533
R Square	.224	.284
Adj. R Square	.221	.277
Coefficients-		
constant	9.441	9.059
std. error _{con}	.700	.680
95% C. I.	8.063/10.820	7.720/10.398
BV/E	.536	.361
std. error _{BV/E}	.067	.076
95% C. I.	.404/.668	.211/.511
LV/E		.573
std. error _{LV/E}		.133
95% C. I.		.311/.836
t-statistics-		
constant	13.495	13.332
BV/E	8.023	4.747
LV/E		4.301
p-value-		
constant	.000	.000
BV/E	.000	.000
LV/E		.000
Model-F-statistic		
-Durbin-Watson	1.876	1.984
-Collinearity		
-Tolerance	1.000	.715
-VIF	1.000	1.399
-condition index	3.727	4.730
Pearson Correlations		
-MV/E to BV/E	.473	.473
-MV/E to LV/E		.459
-LV/E to BV/E		.534
Mean-Std. Dev. - MV/E		
- BV/E	14.301/5.950	14.301/5.950
- LV/E	9.065/5.253	9.065/5.253
		3.431/2.999

Table 3
Statistical Results of Validation of Hypothesis Three

Statistic	Model Three	Validation Model
n	225	158
Dependent variable	MV/E	MV/E
Independent variable	BV/E , LV/E	BV/E , LV/E
R	.533	.556
R Square	.284	.309
Adj. R Square	.277	.300
Coefficients-		
constant	9.059	10.014
std. error _{con.}	.680	.733
95% C. I.	7.720/10.398	8.567/11.461
BV/E	.361	.351
std. error _{BV/E}	.076	.084
95% C. I.	.211/.511	.186/.517
LV/E	.573	.589
std. error _{LV/E}	.133	.150
95% C. I.	.311/.836	.292/.886
t-statistics-		
constant	13.332	13.669
BV/E	4.747	4.203
LV/E	4.301	3.915
p-value-		
constant	.000	.000
BV/E	.000	.000
LV/E	.000	.000
Model-F-statistic	43.961	34.645
-Durbin-Watson	1.984	2.045
-Collinearity		
-Tolerance	.715	.725
-VIF	1.399	1.379
-condition index	4.730	4.670
Pearson Correlations		
-MV/E to BV/E	.473	.490
-MV/E to LV/E	.459	.480
-LV/E to BV/E	.534	.524
Mean-Std. Dev. - MV/E	14.301/5.950	15.040/5.476
- BV/E	9.065/5.253	8.792/5.135
- LV/E	3.431/2.999	3.288/2.854

SUMMARY AND CONCLUSIONS

In summary, liquidation value has explanatory power in relation to market capitalization and, by proxy, has value for decision-making purposes.

Results from testing the two research questions provided strong evidence to support the relationship of LV to market capitalization. Though the portion of the variance of both dependent variables that was explained by liquidation value in the models was less than the portion of the variance of the dependent variable explained by book value in the models, liquidation value was significant alone in the simple regressions and was incrementally value relevant in combination with book value in the multiple regressions.

The expected contribution of this study and the line of research it generates will be to contribute to the existing accounting and finance literature by raising the issue of present value-based measurements of long-term

assets from a different perspective. An additional expected contribution will be to the existing accounting literature by demonstrating the incremental value-relevance of liquidation value, the provision of reporting incentives for disclosure of this information, and thereby the reduction of informational asymmetry between financial analysts and other financial professionals and the general investing public.

There is a need to expand future research to industries with lower fixed operating asset-to-total asset ratios to test the generalizability of the results. The uniqueness of the transportation sector and the challenges it poses, that were detailed in the validation section of the paper also make generalizability of a regression model to other industries difficult. Generalizable results are deemed to be essential to influencing financial reporting standards.

The concept of value-relevance is itself only a highly correlated proxy for usefulness for decision-making purposes. Another method of testing the real world usefulness for decision making purposes of liquidation value by proxy would be to conduct an experimental economics study of the effects on decision making of incrementally revealed liquidation value. Such an experimental study could provide evidence of whether the use of this specific accounting metric (current liquidation value) would be dependent upon its predictive value or if its use is also dependent upon the user's ability to understand the information. This further evidence would expand upon the findings of Stice (1991) concerning the nature of "publicly available" information and the possible applications of the information such as those studied by Walter (1994) for identifying takeover targets.

AUTHOR INFORMATION

Gary Saunders, DBA, CPA earned his doctorate at the University of Kentucky in 1977. He joined the faculty at Marshall University in 1990 and is currently Professor of Accountancy and Elizabeth McDowell Lewis Chair in the LCOB at Marshall. Dr. Saunders has published extensively and has authored two accounting simulation textbooks, a cost accounting textbook and a spreadsheet textbook. He operates Integrated Business Systems, a publishing company.

Maurice Lockridge, PhD, CPA earned his doctorate at the University of Memphis in 2004. He is currently an Assistant Professor of Accountancy in the Lewis College of Business at Marshall University in Huntington, WV where he teaches accounting at the introductory as well as the graduate level.

Uma Sridharan, PhD earned her doctorate at the University of Iowa in 1990. She is currently an Associate Professor of Finance in the College of Business & Public Affairs at Lander University in Greenwood, SC where she teaches all aspects of finance.

REFERENCES

1. Bar-Yosef, S. and S. Lustgarten. 1994. "Economic Depreciation, Accounting Depreciation, and Their Relation to Current Cost Accounting." *Journal of Accounting, Auditing & Finance*. Vol. 9, No. 1 (Winter): 41-60.
2. Beidleman, C.R. 1973. "Valuation of Used Capital Assets." *Studies in Accounting Research # 7*, American Accounting Association. Sarasota, Florida.
3. Berger, P., E. Ofek and I. Swary. 1996. "Investor Valuation of the Abandonment Option." *Journal of Financial Economics*. (42): 1-31.
4. Bernard, V.L. 1994. "Accounting-based Valuation Methods, Determinants of Market-to-Book Ratios, and Implications for Financial Statement Analysis." Unpublished Working Paper, University of Michigan.
5. Burgstahler, D.C. and I.D. Dichev. 1997. "Earnings, Adaptation, and Equity Value." *The Accounting Review*. (April): 187-215.
6. Downs, T.W. and K.A. Shriver. 1992. "The Analytical Derivation and Empirical Test of a Tax-Adjusted Fundamental Value Model." *Journal of Accounting Research*. (Supplement): 77-98.
7. Fama, E.F. and K.R. French. 1992. "The Cross-Section of Expected Stock Returns." *Journal of Finance*. 47: 427-465.
8. Fama, E.F. and K.R. French. 1993. "Common Risk Factors in the Returns on Stocks and Bonds." *Journal of Financial Economics*. (33): 3-56.

9. Fama, E.F. and K.R. French. 1995. "Size and Book-to-Market Factors in Earnings and Returns." *Journal of Finance*. 50: 131-155.
10. Fama, E.F. and K.R. French. 1996. "The CAPM is Wanted, Dead or Alive." *Journal of Finance*. 51: 1947-1958.
11. Financial Accounting Standards Board (FASB). 1978. *Statement of Financial Accounting Concepts No. 1. Objectives of Financial Reporting by Business Enterprises*. Financial Accounting Standards Board.
12. Frankel, R. and C.M.C. Lee. 1998. "Accounting valuation, market expectation, and cross-sectional stock returns." *Journal of Accounting and Economics*.25: 283-319.
13. Henning, S.L. and T. Stock. 1997. "The Value-Relevance of Goodwill Write-Offs." Unpublished working paper, University of Colorado at Boulder.
14. Hirshleifer, J. and J.G. Riley. 1992. "The Analytics of Uncertainty and Information." *Cambridge Surveys of Economic Literature*. Cambridge University Press. New York and Cambridge.
15. Kimmel, P.D., J.J. Weygandt and D.E. Keiso. 2000. "Financial Accounting Tools for Business Decision Making." John Wiley and Sons, Inc. New York, New York (2nd Edition) 417-418.
16. Lehman, B. 1993. "Earnings, Dividend Policy, and Present Value Relations: Building Blocks of Dividend Policy Invariant Cash Flows." *Review of Quantitative Finance and Accounting*. No. 3: 263-282.
17. Modigliani, F. and M.H. Miller. 1958. "The Cost of Capital, Corporation Finance, and The Theory of Investment." *The American Economic Review*. Vol. 48, No. 3 (June): 261-297.
18. Ou, J.A. and S.H. Penman. 1994. "Financial Statement Analysis and the Evaluation of Book-to-Market Ratios." Working paper, Santa Clara University and the University of California at Berkeley. (May).
19. Stice, E.K. 1991. "The Market Reaction to 10-K and 10-Q Filings and to Subsequent 'The Wall Street Journal' Earnings Announcements." *The Accounting Review*. (January): 42-55.
20. Subramanyam, K.R. and J.J. Wild. 1996. "Going Concern Status, Earnings Persistence, and the Informativeness of Earnings." *Contemporary Accounting Research*. (Spring): 251-273.
21. Walter, R.M. 1994. "The Usefulness of Current Cost Information for Identifying Takeover Targets and Earning Above-Average Stock Returns." *Journal of Accounting, Auditing & Finance*. Vol. 9, No. 2 (Spring): 349-377.