

## An Investigation of Relationship between Earnings Conservatism and Price to Book Ratio Based on Basu's Method

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### Abstract

One of the most important concepts in financial statement analysis and evaluation is conservatism. Thus recognition of the factors which influence conservatism can considerably help the investor in managing the selection of more conservative assets properly and avoiding the untrue exposure of financial statements. This research is about to consider the relation of effective factors on organizations' conservatism that one of them is the portion of shares' market value to shares' book value. Data was collected from annual reports of listed companies on Tehran Stock Exchange during 2003-2009. The results of the study revealed that there was no significant relationship between earnings conservatism and price to book ratio.

**Keywords:** Earnings conservatism, Price to book ratio, Good news and Bad news.

### Introduction

Financial information is one of the most important principals at present human society. In today's world unlike before by companies' extension from single owner business units to giant corporations or even international and multinational companies, their financial information users have become more and encompass a great range. Each user makes decision in relation with his present situation by receiving compressed information from companies. Much of this information is supplied by accounting system. After providing, financial statements are given to the

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users outside of the organization. This great range of users has different parts which are: Investors, creditor providers, financial analyzers, banks and credit institutions, insurances, governors.

Each part in relation with their different needs, demand for particular information, in which meeting all these needs by financial statement providers is impossible. Since investors play important part by their reputation and their direct influence on company's policies and decisions because of owning capital, they have gain more attention in providing financial statements and it assumes that by meeting their needs much of other users' needs would be satisfied. Further, now day's world communication development and facilitation, and need for massive capital to gain more profit made companies collecting capital from society to coincidence this new situation. Investors and creditors would be encouraged to invest in companies in condition that knowing their status by studying financial statements. In such situation financial information users especially investors and creditors face agency and asymmetry problems. Directing managers who are responsible for providing financial statements by their complete awareness of company's financial situation and their target of collecting more capital and financial resources, have different motivations than investors and creditors. Most of business managers are optimistic and when they are asked about company's status, thy answer it is in its best situation. If managers not be restrained, this assets and profit optimism would be extended. Often managers try to show company's picture desirable. In such situation accounting principles and procedures supporting by accounting standards, using conservatism principle to regulate managers' optimism, support stakeholder rights and publish financial statements fair. Hence conservatism is one of the accounting limiting principles, which has been used by accountants for years (Watts 2003).

### **Problem of the study**

The aim of financial statements is providing precise and classified information about company's financial status and flexibility, which is useful for great range users in economic decision making. In financial reporting literature, conservatism is explained as: conservatism is

applying some degree of attention in evaluation in uncertain conditions, so that avoiding reporting incomes and assets more than reality.

Almost all of the outside users are trying to forecast profit in some of future periods. So investors estimate their expected profit using company's financial reports. In addition, investors mostly rely on indexes like cash profit or cash flows rather than other indexes, so reported profit is one of the indexes for investor's expected output determination.

This research assumes that conservatism which is tendency to recognition bad news about incomes rather than good news is generally more in portfolios of companies with lower proportion of market value to book value, rather than portfolios of companies with higher proportion. As a result negative relationship between earnings conservatism and P/B ratio is basically because of profit commitment parts, not operating cash flow parts of it.

Basu (1997) has explained the earnings conservatism as a methodology, in which in reaction to bad news, the identification of incomes and net outcomes decreases, in the case that in reaction to good news it doesn't increase. Price share is the price of each share at the end of each year under review.

Common book share is all of the factors which are written in equity part (belong to common stock) in balance sheet. For calculating book value of a common stock, the value of owners' common stock is divided on the number of shares owned by people.

Price to book ratio, shows the value of company's capital market divide on company's assets book value. Portfolio is the basket of shares. Often investors form a basket of shares to reduce the risk of their investment, which is called portfolio.

The periods in which earnings conservatism is calculated, call examined periods. Good news means shares positive output, and bad news means shares negative output.

### **Research objectives**

The aim of current study is to determining whether earnings conservatism is more in portfolios which their proportion of market

value to book value is less, or in reverse, in portfolios which their proportion of market value to book value is more.

Investors' right for requesting real financial statement disclosure brings a need for earnings conservatism to limit litigation losses, which are results of claim about exaggeration in assets or net incomes. Legal proceedings are mostly because of showing incomes and assets more than reality, rather than showing less than reality. Auditors and managers become encouraged to identify incomes and assets less, since they understood that the expenses of identifying them more, is more than identifying them less.

So, earnings conservatism can considerably help the investor in managing the selection of more conservative assets properly and avoiding the untrue exposure of financial statement. Managers act biased in using accounting criterions which are the base for reporting to the investors, to improve the benefits of themselves and interfere in information transformation. Convention interpretation points to benefits conflicts between contract parties and the exploitive units. These contracts include managers' contracts, shareholder and other creditors' debt contract. Each party is looking for its own benefits. But conservatism because of its requirement for self proof and confirmation capability, limits managers' bias opportunistic behavior and delays profit identification, so shows net assets and profit less. In contracts, these effects improve the firm's value. Since conservatism limits managers opportunistic pay offs to himself and other groups like stockholders. In this concept, conservatism is an efficient conventional mechanism.

Since taxable income and methods of its calculations, depends on reported profit, in consequence profit calculation is under penetration and manipulation. The relationship between reported profit and taxable income has been seen in some companies who were looking for refunding their further tax paid because of cheating in their profit reporting. Firms have taxable income until they are profitable. The relationship and dependence between taxable income and reported profit is a motivation of profit transformation to future periods. So, one of the most important concepts in financial statement evaluation and analysis is the concept of conservation.

### Review of literature

Ball et al., (2000) extended Basu's (1997) approach to understand internal differences between countries, in conservatism based on differences in deviation on regression coefficient of profit to output.

Richardson and Tinaikar (2004) expressed that if equity prices record good and bad news efficiently, the application of Ex-post conservatism makes deviation on regression coefficient of profit to output for firms with negative output (bad news), becomes more rather than firms with positive outputs (good news).

Givoly and Hayn (2000) in a study used the proportion of coefficient deviation of bad news to good news to induce conservatism.

Basu (1997) compared regressions  $R^2$  for firms with good and bad news, to induce conservatism and asserted that accounting identifies bad news conservation in profits in a more timely method, rather than bad news.

Watts (2003) in a study calculated earnings conservatism as different proof trait, needed for identifying profit against loss.

Kwon et al., (2001) in a research identified good news as profits rather than identifying bad news as losses.

Jinhan et al., (2005) considered the relationship between earnings conservatism and price to book ratio. Their results were congenial with Basu's (1997) findings, that incomes are conservatism, which means that profits are associating with firm's bad news outputs rather than firm's good news vigorously. In addition they pointed to two new things: the first, earnings conservatism is related to P/B ratio contrarily and the second, the contrary relationship between earnings conservatism and P/B ratio is a commitment phenomenon not a cash flows phenomenon.

### Research methodology

This research methodology of this research is correlation methodology, which is run based on real information about stock market and financial statements of listed companies on Tehran Stock Exchange.

### Research hypotheses

According to the objectives of the study the following hypotheses are postulated in the study:

1. Earnings conservatism is more in portfolios in which price to book ratio is less.
2. There is earnings conservatism in all of the portfolios.
3. There is earnings conservatism in all of the reviewed periods.

### Conservatism measurement method

Earnings conservatism measurement is a result of reverse regression of profit on output in firms' portfolios. The measurement method is Basu (1997) in regression equation  $X_{it} = \beta_{ot} + \beta_{vt} R_{it} + \varepsilon_{it}$  variable  $x_{it}$  is firm's profit for fiscal year  $t$ , which is balanced by equity market value, in the beginning of fiscal year or in other words, the end of the fiscal year  $t-1$ . The variable  $R_{it}$  shows  $i$  firms' common stock market output rate for 12 months which ended four months after the next fiscal year. And assume  $\varepsilon_{it}$  as random meddlers. The  $\beta_{vt}$  regression coefficient has been interpreted as a scale of being timely, with which profits reflect annual output of firms' portfolios with ended fiscal year in  $t$ .

In a firm's given portfolio,  $(\beta_{vt})^{GN}$  and  $(\beta_{vt})^{BN}$  are estimated for subsidiary portfolios of firms with good and bad news in year  $t$ . The equation  $C_t^p = \beta_1^{BN(p)} - \beta_1^{GN(p)}$  measures earnings conservatism for a given portfolio, which is the difference between profit high sensitivity for firms' good news in contrast bad news in  $p$  portfolio in fiscal year  $t$ . The measurement of proportion of market value to book value at the beginning of year is  $p_{t-1} / B_{t-1}$ , where  $P_{t-1}(B_{t-1})$  shows equity market value (book value) at the end of fiscal year  $t-1$ .

### Data collection method

Data needed for this research has been collected based on library method. So, necessary information has been collected from existed documents and Tehran Stock Exchange organization database. The gathered information included firms' financial statements. The gathered data has been modified, classified by Excel software and then financial

statements have been analyzed by one variable and multivariate regression.

### Data analysis

According to Basu,s (1997) method, in regression equation  $X_{it} = \beta_{0t} + \beta_{1t}R_{it} + \varepsilon_{it}$  variable  $x_{it}$  is firm's profit for fiscal year t, which is balanced by equity market value, in the beginning of fiscal year or in other words, the end of the fiscal year t-1. The variable  $R_{it}$  shows i firms' common stock market output rate for 12 months which ended four months after the next fiscal year. And assume  $\varepsilon_{it}$  as random meddlers. Statistical society is divided in two parts. The first part is common stock with positive output (good news) and the second part is common stock with negative output (bad news). To determine the effect of accurate observations, norm will be used, i.e. the highest and the lowest percentages of net profit will be removed. The  $\beta_{1t}$  regression coefficient has been interpreted as a scale of being timely, with which profits reflect annual output of firms' portfolios with ended fiscal year in t.

In a firm's given portfolio,  $(\beta_{1t})^{GN}$  and  $(\beta_{1t})^{BN}$  are estimated for subsidiary portfolios of firms with good and bad news in year t. The equation  $C_t^P = \beta_1^{BN(p)} - \beta_1^{GN(p)}$  measures earnings conservatism for a given portfolio, which is the difference between profit high sensitivity for firms' good news incontraast with bad news in p portfolio in fiscal year t. P/B stands for price equity to book equity ratio. Good news stands for shares positive output and bad news stands for shares negative output. These are resulted by SPSS software.

Table1. Descriptive statistics of full sample

Variable	Mean	S.D	First Quartile	Median	Third Quartile	Min	Max
R	0.232	0.821	-0.128	0.022	0.349	-1.24	7.16
E	0.183	0.752	0.027	0.121	0.214	-5.204	9.61
P/B	6.883	108.50	0.000	1.525	3.74	0.000	50.33

Table2. Descriptive statistics of Good news

Variable	Mean	Standard Deviation	First Quartile	Median	Third Quartile	Min	Max
R	0.617	0.953	0.127	0.314	0.638	0.001	7.163
E	0.292	0.716	0.08	0.163	0.273	-3.5	6.68
P/B	10.06	1.48	0.000	1.677	4.09	0.000	50.33

Table3. Descriptive statistics of bad news

Variable	Mean	Standard Deviation	First Quartile	Median	Third Quartile	Min	Max
R	0.617	0.953	0.127	0.314	0.638	0.001	7.163
E	0.292	0.716	0.080	0.163	0.273	-3.5	6.680
P/B	10.06	1.480	0.000	1.677	4.090	0.000	50.330

Table4. The relationship between profits and outputs

Year	Good News				Bad New				$\beta_1^{BN} - \beta_1^{GN}$
	Number of observation	$\beta_0$	$\beta_1$	Adjusted $R^2$	Number of observation	$\beta_0$	$\beta_1$	Adjusted $R^2$	
2003	93	0.09	0.183	0.063	52	0.13	0.12	0.001	0.056
2004	96	0.132	0.03	0.01	53	0.106	0.291	0.005	0.261
2005	86	0.120	-0.037	-0.008	55	0.055	0.124	0.004	0.162
2006	63	0.184	-0.045	0.028	77	0.118	0.251	0.022	0.296
2007	71	0.553	0.534	0.025	50	0.582	-0.08	-0.021	-0.614
2008	81	0.974	-0.25	-0.003	31	0.34	0.555	0.284	0.805
2009	60	0.171	-0.011	-0.017	65	0.052	-0.03	-0.015	-0.02
Mean		0.318	0.058	0.014		0.198	0.176	-0.006	0.118

As it shown in Table 5, there has been earnings conservatism during 2003, 2004, 2005, 2006 and 2007, but nor during 2007 and 2009. The highest amount of earnings conservatism is for 2007 and the lowest amount is for 2006.

**Table6. The relationship of Price to book ratio and the relationship of profits and revenues**

	P/B	Good News			Bad News			$c^P =$	
		$\beta_0$	$\beta_1$	Adj. $R^2$	$\beta_0$	$\beta_1$	Adj. $R^2$	$\beta_1^{BN(P)}$	$-\beta_1^{GN(P)}$
Mean of Annual regressions (t-value)	V (high)	0.222	-0.034	-0.012	0.072	-0.065	-0.028	-0.031	
	IV	0.370	-0.102	-0.002	0.304	0.432	0.000	0.534	0.503
	III	0.255	0.025	-0.003	0.195	0.248	0.004	0.223	0.726
	II	0.345	0.067	-0.007	0.193	0.211	-0.023	0.144	0.87
	I (low)	0.261	0.108	0.000	0.276	0.491	0.001	0.383	1.253
$\beta_1^{\frac{P}{B(I)}} - \beta_1^{\frac{P}{B(V)}}$		0.142		0.556		0.414			

Based on Basu's (1997) method, in the regression equation  $X_{it} = \beta_{0t} + \beta_{1t}R_{it} + \varepsilon_{it}$ , the variable  $x_{it}$  for company profit has been shown for fiscal year of t, which has been balanced for the commence of fiscal year; i.e. at the end of financial period of t-1 via price equity. The variable  $R_{it}$  stands for the revenue for 4 months of the end of fiscal year. The statistic sample has been detailed in subordinate samples of good and bad news, which depends to that whether the shares profit is positive or negative annually. The sample in 5 portfolios has been detailed via P/B ratio, which is the price equity to book equity ratio at the beginning of fiscal year.

The companies with  $P/B \geq 1$  has been divided in remained portfolios (3 to 50 equally).  $P/B=1$  can be considered as critical surface which stimulates conservatism. The implementation of portfolio 1 contains companies with the lowest amount of P/B ratio and portfolio 5 contains companies with the highest amount of P/B ratio. To determine the effect of accurate observations, the norm will be used; i.e. the highest

and the lowest percentage of shares net profit and price to book ratio will be removed. Also the observations with negative official value of equity will be removed at the beginning of fiscal year.  $\beta_1$  of good and  $\beta_2$  of bad news points to the shares revenue coefficient in good and bad news subordinate samples within P/B portfolio.

To measure the amount of earnings conservatism, we use  $C_i^P = \beta_1^{BN(p)} - \beta_1^{GN(p)}$ , i.e. the difference of variation coefficient for companies with good and bad news within a defined portfolio. The deviation coefficient  $\beta_{it}$  will be interpreted as a scale of to be timely. There are earnings conservatism within portfolios 1, 2, 3 and 4, but nor within 5. (Portfolio 5 has the highest amount of P/B). Also it shown that there is not a meaningful relationship between profit observation and P/B. the highest amount of earnings conservatism is for portfolio 4 and the lowest is for 5.

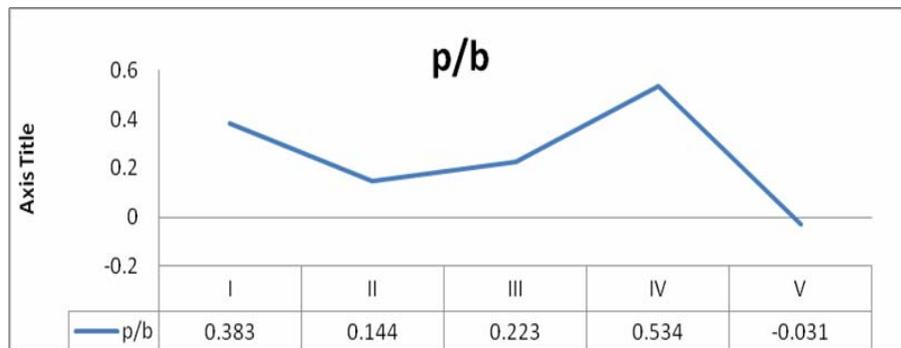


Diagram1. The increase and decrease of earnings conservatism every portfolio

## Conclusion

According to calculation based on Basu's (1997) method, there is no relationship between earnings conservatism and price to book ratio. Also there is no earnings conservatism within all portfolio and periods, so all three hypotheses are rejected.

The present research lead to that there is not a meaningful relationship between earnings conservatism and price to book ratio. Whereas, in a similar research by Jinhan et al., (2005) it was approved

the diverse relationship between portfolio conservatism and the price to book ratio. It seems that the difference of results is because of governmental ownership of major of accepted companies in Tehran stocks exchange. So it is recommended that the applicants of fiscal statements and analyzers which try to pretend the future profit by present profits to be aware of research results, because of imagination that the listed companies on Tehran Stocks Exchange. With less price to book ratio have more earnings conservatism similar to research of other countries.

**References**

1. Ball, R., S.P. Kothari, and A. Robin (2000), The Effect of International Institutional Factors on Properties of Accounting Earnings. *Journal of Accounting and Economics*, 29: 1-51.
2. Basu, S (1997), The Conservatism Principle and the Asymmetric Timeliness of Earnings. *Journal of Accounting and Economics*, 24: 3-37.
3. Givoly, D. and C. Hayn (2000), The Changing Time-series Properties of Earnings, Cash Flows and Accruals: Has Financial Reporting Become More Conservative? *Journal of Accounting and Economics*, 29: 287-320.
4. Jinhua Pae, Daniel B. Thornton, and Michael Welker (2005), The Link between Earnings Conservatism and the Price to Book Ratio
5. Kwon, Y, D. Newman and Y. Suh (2001), The Demand for Accounting Conservatism for Management Control. *Review of Accounting Studies*, 6: 29-51.
6. Richardson, G. and S. Tinaikar (2004), Accounting Based Valuation Models. What Have We Learned? *Accounting and Finance*, 44: 223-255.
7. Watts, R. (2003), Conservatism in Accounting Part I: Explanations and Implications. *Accounting Horizons* .September, 17: 207-221.