

## **The Pricing of Dividends and Book Value in Equity Valuation: The Case of Iran**

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### **Abstract**

This paper compares the combined value relevance of dividends and book value versus combined value relevance of earnings and book value, and investigates their relationships with market value of stock in Tehran Stock Exchange (TSE) from 1996 to the end of 2004. Also, we investigate the relationship between dividends with market value of stock. We derive a model of price in terms of book value and dividends from basic analytical relationships.

The results indicate that: first, there is a positive relationship between dividends, book value, and earning, with stock market value in Tehran Stock Exchange (TSE). This positive relationship is valid for compound models. Second, dividends have the great information content (comparable to earning). Findings highlight the overlooked role of dividends in valuation and estimation processes. The information content of dividends, combination of book value and earnings, and combination of book value and dividends are approximately equal. Book value has the smallest value relevance. The value relevance of all variables had a decreasing trend during the study. Third, in the compound models, the major part of combined value relevance of book value and earnings is related to earnings, and the major part of combined value relevance of book value and dividends is related to dividends. Finally, we conclude that, dividends has very important role in stock valuation.

**Keywords:** Value Relevance, Dividends, Book Value, Market Value, Earnings, Tehran Stock Exchange (TSE)

**Jel Classification Codes:** G12; M41

### **Introduction**

Over the last decade numerous accounting papers investigated the empirical relation between stock market values (or changes in values) and particular accounting numbers (Ohlson (1995); Penman and Sougiannis, 1996; Francis et al., 1997). Ohlson (1995) and Feltham and Ohlson (1995), who base their theory of valuation on residual income valuation model, show that under certain conditions share price can be expressed as a weighted average of book value and earnings. But, some researchers such as

Modigliani and Miller (1959) argued that the earnings reported by firms for any short period like a year are affected by many random factors and distortions. Therefore, replacing earnings with dividends in the accounting valuation model can be viewed as a test of Modigliani and Miller proposition that dividends may have as much or more correlation with price as current earnings.

We compare the value relevance of book value and dividends versus book value and reported earnings. Our methodology of examining the information content of various income statement and balance sheet items is based on cross-sectional and pooled regressions of share price on the value measures. Although, most research in this area has concentrated almost exclusively on explaining stock price by book value and earnings, we focus on the relation between share price with book value and dividends. We develop the relation between stock price, book value, and dividends using basic analytical relationships. The results indicate that, Dividends have large information content and thus, have very important role in stock valuation. Also, dividends have almost the same explanatory power as earnings.

More importantly, when book value, due to inflation and/or the presence of unrecognized assets, is a poor indicator of value, and when earnings are transitory, dividends have the greatest value relevance of the three measures. Our findings indicate that, book value has the smallest value relevance, and the value relevance of all variables had a decreasing trend during the studied period.

The remainder of the paper is organized as follows. Section 2 reviews empirical researches on accounting numbers and stock valuation. Section 3 describes valuation models in terms of book value and dividends, and provides hypotheses. Section 4 describes data, statistical models and methodology. Section 5 presents the empirical results. Section 6 concludes the study.

## **Literature Review**

Ohlson (1995) and Feltham and Ohlson (1996), who base their theory of valuation on the residual income valuation model (RIVM), show that under certain conditions share price can be expressed as a weighted average of book value and earnings. The Ohlson and Feltham-Ohlson models have spawned much empirical research examining the comparative valuation relevance of the balance sheet and the income statement.

Dechow, Hutton and Sloan (1999) provide an empirical assessment of the residual income valuation model proposed in Ohlson's model (Ohlson (1995)). They point out that existing empirical research relying on Ohlson's model is similar to past research relying explicitly on the dividend-discounting model. Their empirical results generally support Ohlson's information dynamics. However, they found that their empirical implementation of Ohlson's model provides only minor improvements over existing attempts to implement the dividend-discounting model by capitalizing short-term earnings' forecasts in perpetuity.

Bernard (1995) was one of the first to gauge the value relevance of accounting data. He compared the explanatory power of a model in which share price is explained by book value and earnings versus a model of share price based on dividends alone. He found that the accounting variables dominate dividends, which is interpreted as confirming the benefits of the linkage between accounting data and firm value.

Brief and Zarowin (1999) compare alternative valuation models that relate share price to book value and earnings and to book value and dividends. They found that, for dividend paying firms on the whole, book value has greater explanatory power for price than either earnings or dividends. However, the combination of book value and dividends has virtually identical explanatory power as book value and earnings. Moreover, earnings and dividends alone have about the same individual and incremental (given book value) explanatory power. For firms with transitory earnings, dividends has greater individual explanatory power than earnings, but once again book value and earnings and book value and dividends have about the same explanatory power.

Burgstahler and Dichev (1997) develop and test an option style valuation model and find that the relevance of earnings versus book value varies by return-on-equity. Collins, Maydew and Weiss

(1997) who base their empirical work on Feltham and Ohlson, find that over the past 40 years, the value relevance of earnings (book value) has decreased (increased). Barth, Beaver and Landsman (1998), motivate their research by the differing roles of the balance sheet and the income statement. They show that for firms in financial distress, the value relevance of book value dominates that of earnings, and more generally, the relative importance of each variable differs across industries due to the degree of unrecognized assets (the greater the amount of unrecognized assets, the lower the relevance of book value).

Hand and Landsman (1999) uses Ohlson's [1995,2001] accounting-based equity valuation model to structure tests of four explanations for the anomalously positive pricing of dividends reported by Rees (1997) and Fama and French (1998). First, they found that dividends are not simply a proxy for publicly available information that helps predict future abnormal earnings. Second, although dividends act as if they signal managers' private information about future profitability, they remain positively priced for firms with low incentives to signal. Third, dividends do not signal management's willingness to abstain from incurring agency costs. Fourth, however, controlling for one-year-ahead realized forecast errors yields a pricing of dividends that is very close to that of dividend displacement. After showing that dividends are not simply a proxy for analysts' misforecasting, they concluded that dividends appear to be positively priced because they are a proxy for the mispricing by investors of current earnings or book equity

Pourheydari, Soleimani Amiri and Safajou (2005) investigate the value-relevance of earnings and book values over time for securities listed in Tehran Stock Exchange (TSE). They find that, first; the variable earnings have almost explanatory power in equity valuation. Second, combined value-relevance of earnings and book values is through of reported earning. Finally, incremental value-relevance of reported earnings is higher than book value, and book value has very little explanatory power in equity valuation.

As pointed out by Modigliani and Miller (1959), dividends might have a greater correlation with a true measure of earnings potential (and therefore price) than current earnings itself. Further, just as the dividend discount model (DDM) and RIVM are algebraically equivalent, it can be shown that a model in which price is related to book value and dividends can be derived from both the RIVM and from the accounting identity which defines initial book value as the present value of future dividends discounted at the accounting rate of return. Second, while our paper and Hand and Landsman (1999) paper show that dividends are value relevant, we show that in certain contexts, dividends have greater value relevance than either earnings or book value. The motivation for developing the statistical models and the empirical results is the main contributions of papers.

The justification for replacing earnings with dividends in the regression of price on book value and earnings is based on two separate arguments. First, it has long been argued that dividends have "information content" in the sense that dividends provide information about the firm's permanent earnings. Therefore, dividends can be viewed as a surrogate for permanent earnings. Second, given the algebraic properties of an accounting system based on the clean surplus relation, an accounting valuation model can be derived in terms of book value and dividends. The proposition that dividends have information content was made by Modigliani and Miller (1959) who argued that the earnings reported by firms for any short period like a year are affected by many random factors and distortions.

### **Valuation Model in Terms of Book Value and Dividends**

Based on paper of Brief and Zarowin (1999), we have a compound model of book value and dividends. Clearly, Bernard (1995)'s study provides a motivation for substituting dividends for earnings in valuation model relating price to book value and dividends. He contrasts regression results for two models, the first one is based on DDM and the second one is based on RIVM. He finds that a regression model based on RIVM outperforms the DDM with  $R^2$  values of .69 and .29, respectively. However, this comparison is "unfair" because we will show that the RIVM contains information about both book value and dividends whereas the DDM contains only information on dividends.

To explain this, we consider discrete-time perfect-certainty model over a finite time horizon. Let  $MV_t$  be market value of common equity at the end of period  $t$ ,  $BV_t$  accounting book value at the end of period  $t$ ,  $d_t$ , the net dividends paid at the end of period  $t$ ,  $a_t$ , the accounting rate of return and  $k$  the cost of capital.

DDM defines market value as:

$$MV_t = \sum_{\tau=1}^T \frac{d_{t+\tau}}{(1+k)^{t+\tau}} + \frac{MV_t}{(1+k)^{t+\tau}}$$

Over the finite time horizon ( $t, T$ ) and RIVM define market value in terms of discounted residual earnings:

$$MV_t = BV_t + \sum_{\tau=1}^T \frac{(\alpha_t - k)BV_{t+\tau-1}}{(1+k)^\tau} + \frac{MV_t - BV_t}{(1+k)^T}$$

Bernard (1995) specified cross section regression models based on DDM in equation (1) and RIVM in equation (2) for four-year forecasts of dividends and residual earnings as: Model 1:

$$MV_t = \beta_0 + \sum_{\tau=1}^4 \beta_{\tau+1} \frac{d_{t+\tau}}{(1+k)^\tau} + e_\tau$$

$$\text{Model 2: } MV_t = \beta'_0 + \beta_1 BV_t + \sum_{\tau=1}^4 \beta'_{\tau+1} \frac{(\alpha_t - k)BV_{t+\tau-1}}{(1+k)^\tau} + e'_\tau$$

In both cases, terminal values were ignored in the model specification. To see why RIVM contains more information than DDM, equate the right hand sides of equations (1) and (2) and define discounted residual earnings in terms of dividends and book value:

$$\sum_{\tau=1}^T \frac{(\alpha_t - k)BV_{t+\tau-1}}{(1+k)^\tau} = \sum_{\tau=1}^T \frac{d_{t+\tau}}{(1+k)^\tau} + \frac{BV_T}{(1+k)^\tau} - BV_t$$

Substituting equation (3) into equation (2) and simplifying,

$$MV_t = BV_t \left(\frac{1+g}{1+k}\right)^T + \sum_{\tau=1}^T \frac{d_{t+\tau}}{(1+k)^\tau} + \frac{MV_T - BV_T}{(1+k)^T}$$

$$\text{Where } g = (BV_T / BV_t)^{\frac{1}{T}} - 1$$

Bernard based regression models on equations (1) and (2), but in specifying the two regression models, he left out the last term,  $\frac{MV_t}{(1+k)^T}$  in equation (1) and the last term,  $\frac{MV_T}{(1+k)^T} - \frac{BV_t}{(1+k)^T}$  in equation (2). But the term that is left out of equation (1) is generally much larger (and, therefore, will have a greater influence on  $R^2$ ) than the term left out of equation (2). This will create a bias in favor of Model 2 since the variables in Model 2 will account for more of the variation in market value than the variables in Model 1. Therefore, since the last terms in equations (2) and (4) are the same, specifying a regression model based on equation (4) instead of equation (1) leaves the same term out of both regression models, resulting in a more level playing field:

$$MV_t = \beta''_0 + \beta''_1 BV_t + \sum_{\tau=1}^4 \beta''_{\tau+1} \frac{d_{t+\tau}}{(1+k)^\tau} + e''_\tau$$

Where  $\beta''_1$  depends partly on  $\left(\frac{1+g}{1+k}\right)^T$  Both Models 2 and 3 are based on RIVM, not DDM,

and both models exclude the same terminal value, i.e.,  $\frac{MV_t}{(1+k)^T}$  Thus, the equivalent form of RIVM in

Model 3 provides a motivation for substituting dividends for earnings to determine which of these two variables has a greater association with price. While equation (4) is derived from RIVM, it is not necessary to rely on RIVM to derive a valuation model in terms of book value and dividends. This can be done in a straightforward way, once it is recognized that a firm's book value can be expressed as

$$BV_t = \sum_{\tau=1}^T \frac{d_{t+\tau}}{(1+\alpha)^\tau} + \frac{BV_T}{(1+\alpha)^T}$$

Where  $\alpha$  is the constant accounting rate of return. Combining equations (1) and (5),

$$MV_t = BV_t + \sum_{\tau=1}^T \frac{d_{t+\tau}}{(1+k)^\tau} - \sum_{\tau=1}^T \frac{d_{t+\tau}}{(1+\alpha)^\tau} + \frac{MV_T}{(1+k)^T} - \frac{BV_T}{(1+\alpha)^T}$$

Equation (6) also provides a motivation for Model 3.

## Hypotheses

Western studies have focused on the relationship between earnings and dividends with market value of organization [Bernard (1995), Hand and Landsman (1999), and Ohlson (1995)]. But, since there are economical, social, political and cultural differences among Iran and western countries, probably there will be differences between my findings and western results.

The hypotheses of this study are:

- 1) There is a positive relationship between book value and market value of stocks.
- 2) There is a positive relationship between earnings and market value of stocks.
- 3) There is a positive relationship between compound of book value and earnings, and market value of stocks.
- 4) There is a positive relationship between dividends and market value of stocks.
- 5) There is a positive relationship between compound of book value and dividends, and market value of stocks.

## Data, Statistical Models and Methodology

The firms used in this research meet the following data availability criteria:

- 1) They have been accepted in TEHRAN STOCK EXCHANGE from 1996 to the end of 2004 and have not been exited from bourse during this period.
- 2) In all those years, during the ending month of each year, their stocks (at least one order) have been traded in the market (to identification of stock prices).
- 3) The end of those fiscal years was on 31 March.

Based on these three criteria, 60 firms are selected to review. Our methodology of examining the information content of various income statement and balance sheet items is based on cross-sectional regressions of share price on the value measures.

As a result, our empirical tests are based on five regression models:

$$MVps_{it} = a_0 + a_1 BVps_{it} + u_{it} \quad (1)$$

$$MVps_{it} = b_0 + b_1 Eps_{it} + v_{it} \quad (2)$$

$$MVps_{it} = c_0 + c_1 BVps_{it} + c_2 Eps_{it} + w_{it} \quad (3)$$

$$MVps_{it} = d_0 + d_1 Dps_{it} + x_{it} \quad (4)$$

$$MVps_{it} = e_0 + e_1 BVps_{it} + e_2 Dps_{it} + y_{it} \quad (5)$$

Where MV is market value of common equity at fiscal year end, BV is book value of common equity at fiscal year end, E is annual net income, D is annual dividends paid. The incremental  $R^2$ 's are computed by these formulas:

$\frac{Eps}{BVps} = |R^2_{BVps \& Eps} - R^2_{BVps}|$  That measures the explanatory power of earning in the compound model of book value and earning.

$\frac{Dps}{BVps} = |R^2_{BVps \& Dps} - R^2_{BVps}|$  That measures the explanatory power of dividends in the compound model of book value and dividends.

$$BVps/Eps = |R^2_{BVps\&Eps} - R^2_{Eps}|$$

That measures the explanatory power of book value in the compound model of book value and earning.

$$BVps/Dps = |R^2_{BVps\&Dps} - R^2_{Dps}|$$

That measures the explanatory power of book value in the compound model of book value and dividends.

All variables are on a per share basis and collected from information software such as TADBIRPARDAZ and SAHRA. Similar to the latest studies, in this paper we focused on the determination coefficient of model ( $R^2$ ).

**Table 1:** Descriptive statistics

Variable	BVps (Rials)	Dps (Rials)	Eps (Rials)	MVps (Rials)	BV/MV (%)	E/MV (%)	D/MV (%)
Median	1987.4	1197.37	1555.02	9206.06	39.2	20.4	16
S.D	1413.41	1397.7	1802.95	11824.2	31	17.2	14.5
Min	-1426	0	-1697	1000	-62.9	-70.6	0
Medium	1603.25	817.5	1095	5594	42.8	19.3	14
Max	15010.8	12601	955.4	104500	227.2	154.5	162.5
Number of observations (firm-year): 540 BVps: Book value per share (Rials) MVps: Market value per share (Rials) Eps: Earning per shar (Rials) Dps: Dividend per share (Rials)				note: all variables are on a per share basis. BV/MV: Book to market ratio(%) E/BV: Earning to market value ratio(%) D/MV: Dividend to market value ratio(%)			

## Results

### Descriptive Statistics

Table 1 provides descriptive statistics. They are market value ( $MV_{PS}$ ), Book value ( $BV_{PS}$ ), earning ( $EP_S$ ), dividends ( $DP_S$ ), book to market ratio ( $BV/MV$ ), earning to market ratio ( $E/MV$ ), and dividends to market ratio ( $D/MV$ ).

**Table 2:** Results of hypothesis 1

Year	Coefficien of BVps	t statistic	P-Value	R <sup>2</sup>	F statistic	Durbin Watson
1996	2.745	4.494	0.0000	0.39	37.227	1.713
1997	3.667	3.825	0.0003	0.64	105.709	1.949
1998	3.548	6.444	0.0000	0.77	197.026	2.012
1999	3.827	3.123	0.0028	0.27	22.186	1.912
2000	4.298	2.695	0.0092	0.27	22.544	1.812
2001	7.214	3.754	0.0004	0.39	37.718	1.965
2002	8.449	2.103	0.0398	0.13	8.722	1.726
2003	0.617	0.438	0.6625	0.14	0.084	1.746
2004	2.987	2.455	0.0171	0.19	6.027	1.800
pooled	3.335	10.256	0.0000	0.16	105.187	1.953
Median of $R^2 = 0.35$						
$MVps_{it} = a_0 + a_1BVps_{it} + u_{it}$						

First four variables are on a per share basis and others are on percent basis. The numbers of observations are 540 firm-years, which are equal to number of sample firm (60) multiply by number of studied years (9).

**Table 3:** Results of hypothesis 2

Year	Coefficien of Eps	t statistic	P-Value	R <sup>2</sup>	F statistic	Durbin Watson
1996	3.251	9.084	0.0000	0.82	271.775	1.872
1997	2.537	8.967	0.0000	0.83	302.316	1.860
1998	3.613	25.958	0.0000	0.92	767.542	1.892
1999	4.384	18.061	0.0000	0.72	156.549	1.972
2000	5.029	7.577	0.0000	0.79	224.394	1.802
2001	9.265	7.122	0.0000	0.68	125.262	1.905
2002	12.396	4.503	0.0000	0.69	129.836	2.024
2003	9.265	6.202	0.0000	0.68	128.227	1.789
2004	8.367	7.135	0.0000	0.73	159.161	1.763
pooled	4.790	22.909	0.0000	0.49	524.835	1.838
Median of R <sup>2</sup> = 0.76						
$MVps_{it} = b_0 + b_1Eps_{it} + v_{it}$						

As you see, the median and standard deviation of stock market value are 9206.6 and 11824.2, respectively. These values are very large which means that stock market values compared to other variables have hard fluctuations.

**Table 4:** Results of hypothesis 3

Year	Coefficien of BVps	t statistic	P-Value	Coefficien of Eps	t statistic	P-Value	R <sup>2</sup>	F statistic	Durbin Watson
1996	0.463	1.619	0.1109	3.018	9.108	0.0000	0.84	140.162	1.902
1997	-0.18	-0.23	0.8163	2.639	5.712	0.0000	0.83	148.958	1.863
1998	0.757	1.983	0.0521	3.007	10.720	0.0000	0.93	437.503	1.903
1999	-0.15	-0.21	0.8307	4.452	16.345	0.0000	0.72	77.028	1.966
2000	-1.91	-2.64	0.0106	5.990	7.523	0.0000	0.82	131.093	1.740
2001	1.672	0.713	0.4785	8.188	4.879	0.0000	0.69	65.089	1.816
2002	-2.38	-1.12	0.2668	13.192	4.245	0.0001	0.69	66.105	2.102
2003	-2.80	-2.16	0.0348	10.281	6.684	0.0000	0.71	72.176	1.942
2004	-2.17	-2.81	0.0067	9.553	8.986	0.0000	0.76	94.448	1.743
pooled	-0.63	-2.81	0.0526	5.128	18.883	0.0000	0.49	215.657	1.849
Median of R <sup>2</sup> = 0.78									
$MVps_{it} = c_0 + c_1BVps_{it} + c_2Eps_{it} + w_{it}$									

### Primary Results

Tables 2, 3, 4, 5, and 6 provide results of hypotheses 1 to 5. They show that all hypotheses were confirmed by confident level of, 95%. Therefore, there is a positive relation between dependent variable and independent variables.

**Table 5:** Results of hypothesis 4

Year	Coefficient of Dps	t statistic	P-Value	R <sup>2</sup>	F statistic	Durbin Watson
1996	3.969	13.593	0.0000	0.81	263.209	1.947
1997	3.750	23.850	0.0000	0.90	568.951	1.790
1998	4.535	15.638	0.0000	0.86	356.330	2.110
1999	4.976	10.078	0.0000	0.64	103.834	1.916
2000	7.057	8.216	0.0000	0.81	258.229	1.773
2001	10.314	6.476	0.0000	0.65	109.218	1.778
2002	17.483	6.180	0.0000	0.76	185.014	2.123
2003	12.786	9.316	0.0000	0.75	181.537	1.909
2004	10.024	5.514	0.0000	0.59	86.923	2.086
pooled	6.089	22.368	0.0000	0.48	500.357	1.905
Median of R <sup>2</sup> = 0.75						
$MVps_{it} = d_0 + d_1 Dps_{it} + x_{it}$						

**Table 6:** Results of hypothesis 5

Year	Coefficient of BVps	t statistic	P-Value	Coefficient of Dps	t statistic	P-Value	R <sup>2</sup>	F statistic	Durbin Watson
1996	1.357	3.931	0.0002	3.420	19.082	0.0000	0.89	254.373	1.738
1997	0.857	3.672	0.0005	3.188	14.624	0.0000	0.92	338.620	1.885
1998	1.670	6.104	0.0000	3.001	11.506	0.0000	0.93	395.880	2.183
1999	1.451	1.868	0.0668	4.405	8.855	0.0000	0.67	58.644	2.001
2000	-0.06	-0.13	0.8490	7.095	7.385	0.0000	0.81	126.925	1.732
2001	2.590	1.239	0.2202	8.595	4.441	0.0000	0.68	62.210	1.942
2002	0.213	0.117	0.9068	17.409	5.864	0.0000	0.76	90.947	1.802
2003	-1.26	-1.39	0.1674	12.939	9.517	0.0000	0.76	92.220	1.965
2004	0.583	0.618	0.5358	9.770	4.528	0.0000	0.60	43.288	2.077
pooled	0.552	1.860	0.0633	5.789	18.317	0.0000	0.48	253.054	1.883
Median of R <sup>2</sup> = 0.78									
$MVps_{it} = e_0 + e_1 BVps_{it} + e_2 Dps_{it} + y_{it}$									

## Secondary results

### Analysis of R<sup>2</sup> Statistics

Table 7 provides valuation model R<sup>2</sup> statistics from annual regressions. Comparison of R<sup>2</sup> statistics shows that all valuation model R<sup>2</sup> statistics had a decreasing trend during the study. Results indicate that book value has the smallest value relevance that is conformed to Dechow, Hutton and Sloan (1999) and Pourheydari, Soleimani Amiri and Safajou (2005).

**Table 7:** Valuation Model R2 Statistics

Year	BVps	Dps	Eps	BVps&Eps	BVps&Dps
1996	0.39	0.81	0.82	0.84	0.89
1997	0.64	0.90	0.83	0.83	0.92
1998	0.77	0.86	0.92	0.93	0.93
1999	0.27	0.64	0.72	0.72	0.67
2000	0.27	0.81	0.79	0.82	0.81
2001	0.39	0.65	0.68	0.69	0.68
2002	0.13	0.76	0.69	0.69	0.76
2003	0.14	0.75	0.68	0.71	0.76
2004	0.19	0.59	0.73	0.76	0.60
Total median	0.45	0.75	0.76	0.78	0.78
Median of 75-78	0.52	0.80	0.82	0.83	0.85
Median of 79-84	0.22	0.71	0.71	0.73	0.72
pooled	0.16	0.49	0.49	0.49	0.48

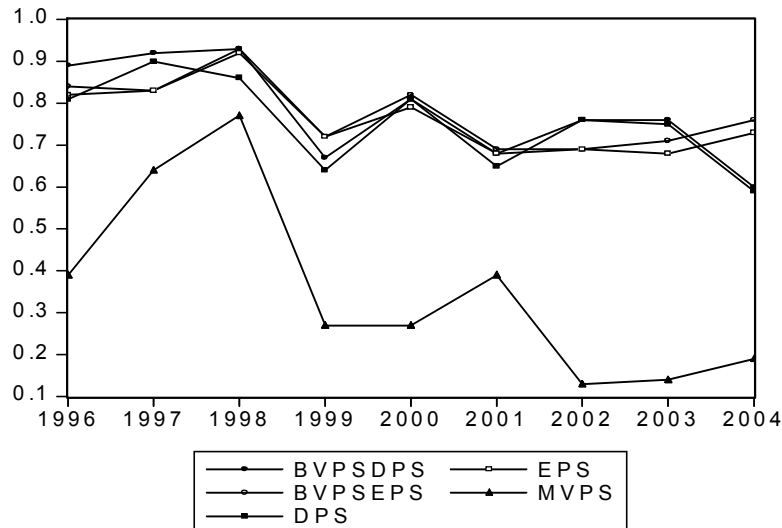
$$MVps_{it} = a_0 + a_1BVps_{it} + u_{it} \quad (1)$$

$$MVps_{it} = b_0 + b_1Eps_{it} + v_{it} \quad (2)$$

$$MVps_{it} = c_0 + c_1BVps_{it} + c_2Eps_{it} + w_{it} \quad (3)$$

$$MVps_{it} = d_0 + d_1Dps_{it} + x_{it} \quad (4)$$

$$MVps_{it} = e_0 + e_1BVps_{it} + e_2Dps_{it} + y_{it} \quad (5)$$

**Graph 1:** The trend of R<sup>2</sup>

Results show that, the information content of dividends, combination of book value and earning, and combination of book value and dividends are approximately equal, which are conformed to Brief and Zarowin (1999). The information content of earning is larger than book value, which is not conformed to Burgstahler and Dichev (1997) and Barth et. al (1998). Our results also show that, the value relevance of combination of book value and earning is larger than value relevance of earning alone, which is not conformed to Subramanyan and Venkatachalam (1998). Bernard (1995) indicated that, dividends have the largest information content, which is consistent to our findings.

If we shape the R<sup>2</sup> statistics diagram (for each regression) during the period studied, we can see that all of them have a decreasing trend, which is conformed to Baruch and Zarowin (1999). This decreasing trend can be arisen from following reasons:

- 1) Focus on future growth opportunities.
- 2) Increase in inflation rate (that creates a large distance between book value and market value of assets).
- 3) Focus on capital gain, compare with earning and dividend per share.
- 4) Intensive fluctuation in Tehran stock exchange during the study.

### Analysis of Incremental $R^2$ statistics

Table 8 provides incremental  $R^2$  statistics. This statistics are provided so that we can present information content of different elements of compound models.

**Table 8:** Incremental  $R^2$  Statistics from annual regressions

Year	Eps/BVps	Dps/BVps	BVps/Eps	BVps/Dps
1996	0.44	0.50	0.01	0.08
1997	0.19	0.28	0.00	0.02
1998	0.16	0.16	0.01	0.07
1999	0.45	0.40	0.00	0.03
2000	0.55	0.54	0.03	0.00
2001	0.30	0.29	0.01	0.03
2002	0.56	0.63	0.00	0.00
2003	0.57	0.62	0.03	0.01
2004	0.57	0.41	0.03	0.01
Total median	0.42	0.42	0.01	0.02
Median of 75-78	0.31	0.34	0.01	0.05
Median of 79-84	0.51	0.50	0.02	0.01
Pooled	0.33	0.32	0.00	0.00
$\frac{Eps}{BVps} =  R_{BVps\&Eps}^2 - R_{BVps}^2 $		$\frac{Dps}{BVps} =  R_{BVps\&Dps}^2 - R_{BVps}^2 $		
$\frac{BVps}{Eps} =  R_{BVps\&Eps}^2 - R_{Eps}^2 $		$\frac{BVps}{Dps} =  R_{BVps\&Dps}^2 - R_{Dps}^2 $		

Incremental  $R^2$  statistics show the information content of each independent variable in the compound models. In the compound models, the major part of combined value relevance of book value and earning is related to earning, and the major part of combined value relevance of book value and dividend is related to dividend. Finally, we conclude that book value has very little value relevance in compound model, too.

### Conclusion

In this study, our results are following:

1. Dividends have large information content and thus, have very important role in stock valuation,
2. Book value has the smallest value relevance, and
3. The value relevance of all variables had a decreasing trend during the studied period.

Thus, for estimation of stock prices and economic decision making, we proposed to investor and stockholders that, because of high inflation rate in our country, do not rely on book value as only decision variable. They can apply dividends and earnings, because these two variables have largest information content in Iran.

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