



Dividend Payment and its Impact on the Value of Firms Listed on Istanbul Stock Exchange: A Residual Income Approach

Akram Budagaga*

Warsaw School of Economics (SGH), Poland. *Email: ab63115@doktorant.sgh.waw.pl

ABSTRACT

The aim of this study is to examine the impact of dividend payments on the value of firms listed on the Istanbul Stock Exchange (ISE). The study has been adapted the residual income approach based on Ohlson's (1995) valuation model. By testing different statistical techniques, fixed effect is applied on panel data for 44 firms listed on ISE for the period 2007-2015, inclusive. The findings show a positive significant relationship between dividend payments and the value of firms. The results tend to support agency cost rather than the signaling hypothesis explanation. Moreover, the study suggests that the dividends irrelevance hypothesis is invalid in the case of firms listed on the (ISE).

Keywords: Dividend Payment, Residual Income, Value of Firms

JEL Classifications: C58, E44

1. INTRODUCTION

Dividends policy has for many decades been a controversial subject among researchers. Despite years of investigations, financial scholars have not yet reached an unequivocal answer to the question of whether or not dividend payments have any connection to a firm's value.

Different views exist regarding the effect of dividend payments on the value of firms. Some empiricists argue for dividends irrelevance, while others take the opposite view and maintain that dividends do have relevance. With this debate in mind, this paper aims to test whether or not dividend payments impact on the value of firms listed on the Istanbul Stock Exchange (ISE) by using the residual income approach developed by Ohlson (1995), in order to judge the validity of the irrelevance hypothesis in the Turkish market. The remainder of this paper has been structured as follows: Section two, theoretical background; Section three, literature review and hypotheses development; Section four, methodology, selected data, and limitation; Section five, empirical results and discussion; Section six, conclusion.

2. THEORETICAL BACKGROUND

Generally, financial scholars are divided into two camps when discussing dividend policy and its impact on the value of a firm. On one side, researchers believe there is no relationship between dividends and a firm's value (irrelevance theory), while on the other side, scholars claim there is a correlation (relevance theory). Among this latter group, there are also two factions, one which supposes that the relationship is positive, and one which considers it to be negative.

2.1. Irrelevance Theory

In 1961, two Nobel laureates, Merton Miller and Franco Modigliani (M&M), proposed a theory which, more than 50 years on, remains one of the most respected in the canon of financial literature (Baker, 2009). They argued that under the ideal circumstances of a perfect capital market, rational investor behavior, and perfect certainty, the dividend payment is unrelated to a firm's value. In other words, the irrelevance theory assumes that in an ideal business world there is no conflict of interest between managers and shareholders, and that all information is free and there is equal access for all investors. Furthermore, under ideal circumstances there are no transaction

costs when buying and selling shares, and no differences between the tax rates for dividends and the tax rates for capital gains. In this model, dividend policy follows investment decisions which become so-called residual dividends policy. As a consequence, dividends have no effect on the value of a firm.

2.2. Relevance Theories

2.2.1. Bird in hand theory

The logic of this theory is that in light of uncertainty in the business environment, investors always prefer to have current dividends (a bird in the hand) to capital gains (TWO in the bush) because capital gains relate to the future which is much riskier than present dividends. Hence, investors will be willing to pay a higher price for firms with dividend payments and as a result, maximize the value of the firm (Gordon, 1963; Walter, 1963).

2.2.2. Signaling (asymmetric information) theory

The essence of signaling theory is that a firm's management is likely to have private knowledge about the current and future situation of their company than outsiders will have (asymmetric information). Managers use dividends as a device to deliver useful information to the financial market about present and future profit and growth of their firm (John and Williams, 1985). Lintner's (1956), best known research revealed that managers are concerned about a signal of profit distribution over time. Bhattacharya (1979) suggests that dividend payouts may function as a signal of a company's financial health, with an increase in dividends indicating that managers expect their business to have a higher cash flow in the future. As consequences, a higher value is signaled by higher dividends.

2.2.3. Agency theory

One of the assumptions of irrelevance theory is that under perfect market conditions there is no conflict of interest between corporate insiders (managers) and outside shareholders. However, in practice this assumption is doubtful. According to agency theory, unless earnings are distributed to outside shareholders, they might be diverted by managers for personal utility or committed to unprofitable ventures that provide private benefit for managers. As a result, agency cost implies that shareholders have a preference for dividends over profit, and firms with generous dividend payments will improve their value by decreasing the amount of funds available to managers (Rozeff, 1982; La Porta et al., 2000).

2.2.4. Tax related theories

These theories were developed by Brennan (1970) and Litzenberger and Ramaswamy (1979). They argue that investors who receive appropriate tax treatment may prefer shares either with low dividends or with no dividends at all. Dividends are taxed immediately and at a higher rate than capital gains, and as a consequence high dividend payouts would increase the shareholder's taxable income. Fixed investors, therefore, prefer firms which retain profits rather than distribute them as dividends. Black and Scholes (1974) revealed that investors calculate the trade-off between high dividend payments benefit and capital gains, and that investors tend to choose firms that have a dividends strategy that meets their personal requirements.

3. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Miller and Modigliani (1961) claimed that under certain assumptions a company's market value is not affected by dividend policy. Brennan (1971) supports this irrelevance view, and concludes that any denial of irrelevance theory must be based upon a denial of the principal of asymmetric rational markets and the assumption of independence of irrelevant information. To reject the latter assumption, the following terms are required: (1) Investors are not rational; and (2) share prices rely upon past events and expected future prospects. Black and Scholes (1974) carried out their research on firms listed on the New York Stock Exchange for the period between 1931 and 1966, and results suggested that there is no correlation between dividend and market value. Hakansson (1982) suggested that dividends, whether informative or not, give no value role when investors have homogeneous beliefs and time-additive utility as well as a market which is entirely efficient. Ohlson (1995) assumed that dividend payouts only decrease current book value and future earnings, but it do not affect current earnings which is, to some extent, consistent with the assumptions of M&M.

Other scholars, however, take the opposite view. Gordon (1963) pointed out that investors prefer income paid as dividends rather than capital gains; he reasoned that dividend payouts affect a firm's shares. Woolridge (1983) analyzed the unforeseen changes of dividends and their impact on the value of common and preferred stocks as well as bonds. He found that signaling around dividend alterations is the main factor affecting share price. Baskin (1989) employed panel data analysis to discover the effects of dividends on stock volatility of 2344 US firms for the period 1967-1986. The findings reported a strong correlation between dividend yield and securities price volatility. Fama and French (1998) used a cross-sectional regression approach to figure out the effect of tax and financial decisions on the market value; they found that dividends convey positive information about the value and that, in a sense, there is a positive relationship between a firm's value and its dividends.

Baker and Wurgler (2004) examined the catering theory by construct four share prices based on measures of investor demand for dividend payers, and they conclude that catering is the most natural explanation and that dividends are highly related to share value. Hussainey et al. (2011) examined the relationship between dividends policy and share price changes in the British Stock Market, and the evidence showed that the dividend payout ratio and security price changes have a negative correlation. Proffitt and Bacon (2013) investigated the impact of selected financial factors on overall securities price volatility, using the ordinary least squares regression model. They determined that among other factors, dividend payment has a positive impact on share price volatility.

There are limited studies about the effect of dividends on the value of a firm in emerging markets. Some empiricists support irrelevance theory, however, including Chen et al. (2002) who tested the information content of annual earnings and dividend

announcements made by listed Chinese firms. The findings revealed that cash dividends have no impact on the stock return. Uddin and Chowdhury (2005) investigated the effect of dividends announcements on the shareholders' value of 137 firms listed on the Dhaka Stock Exchange, and their evidence also supports the irrelevance hypothesis. Likewise, Irum et al. (2012) found that cash dividend announcements have no significant impact on share price of the petroleum sector in Pakistan. Ilaboya and Aggreh (2013) examined the relationship between dividends and share price volatility across firms listed on the Nigerian Stock Exchange, finding that dividend payouts have no significant influence on share price volatility. Most recently, Jakata and Nyamugre (2015) revealed that dividends policy does not affect the stock price.

However, other researchers have come to different conclusions. Yilmaz and Gulay (2006) investigated the effect of cash dividend payments on stock return of firms listed on the ISE between 1995 and 2003. They found that cash dividends did influence prices and trading volumes. Yilmaz and Selcuk (2010) revealed that increasing dividends results in a positive reaction; while decreasing dividends has a negative effect – which is in line with signaling hypothesis. Al-Yahyaee et al. (2011) conducted their research on Omani listed firms which announced cash dividends between 1997 and 2005. Findings showed that the announcements of increases in cash dividends result in a significant positive share price reaction, while decreases of cash dividends have a negative effect on share price. Zakaria et al. (2012) found that payment of dividends significantly influences stock price. Ajanthan (2013) concludes that dividend payment is a crucial factor affecting a firm's value. Al Masum (2014) found that dividend yield has a significant negative correlation with share price. Majanga (2015) found that a firm's dividend positively affects its share price. Sharif et al. (2015) provided strong evidence from the Bahrain market that dividend per share is a determinant of share price. Kadioglu et al. (2015) examined market reaction to cash dividend announcements made by 118 firms listed on the ISE during the period 2003-2015. He found that there is a negative relationship between cash dividends per share and abnormal returns which supports the tax-clientele-effect proposition.

3.1. Formulation of Research Hypotheses

H₀: Ceteris paribus, dividend payment has no significant impact on the value of firms listed on the ISE.

H₁: Ceteris paribus, dividend payment has significant impact on the value of firms listed on the ISE.

4. METHODOLOGY, SELECTED DATA AND LIMITATION

This paper aims at examining the effect of dividend payments on the value of firms listed on the ISE. The study has employed the residual income model developed by Ohlson (1995) where the first development depends on the "Clean Surplus" Relation which defines the relationship between accounting earnings (x), accounting book value of equity (BV), and net dividends (D) through time (t) (Myers, 1999. p. 3):

$$BV_t = BV_{t-v} + X_t - D_t \tag{1}$$

Where,

BV_t = Company book value at time t ,

X_t = Earnings for period t ,

D_t = Dividends for period t .

The second development is that the clean surplus relation assumes the no-infinite-growth condition in book value, implying an accrual accounting-based expression for equity value (Swartz et al., 2006. p. 70):

$$P_t = BV_t + \sum_{\tau=1}^{\infty} RFE_{\tau} [RI + \tau] \tag{2}$$

Where,

P_t = Market price of the security at time t ,

BV_t = Company book value at time t ,

RF = One plus the risk free interest rate;

E_t = The expectations operator reflecting information available at time t ;

RI = Residual income (abnormal earnings).

Where, The residual income is defined as follows:

$$RI_{it} = X_t - (RF-1) BV_{t-1} \tag{3}$$

Residual income is equal to earnings (X) less a capital charge (risk free rate) ($RF-1$), depending on the concept that introduces the book value (BV_{t-1}) into the model representing normal earnings on capital invested and any earnings exceeding normal earnings are abnormal.

The third development made to the Ohlson (1995) model concerns the time variant behavior of normal earnings. Hence, the role of other information is recognized. The linear information dynamic (LIM) is formulated by adding another information variable V_t to include information other than abnormal earnings (ibid):

$$RI_{t+1} = \omega RI_t + V_t + \epsilon_1 t + 1 \tag{4a}$$

$$v_{t+1} = \gamma v_t + \epsilon_2 t + 1 \tag{4b}$$

Where the disturbance terms $\epsilon_1 t+1$ and $\epsilon_2 t+1$ are with zero means and constant variances. The parameters $0 < \omega < 1$, $0 < \gamma < 1$ are fixed at t . ω = measures the amount of change in future residual income due to changes in current residual income. RI_t denotes residual income and V_t denotes other relevant information.

Combining equation (2) with equations (4a) and (4b) achieves a linear function for P_t . The linear information dynamic formula can be expressed as follows (Ohlson, 1995):

$$P_t = BV_t + \alpha_1 RI_t + \alpha_2 V_t \tag{5}$$

Depending on the equation (5), the researcher estimated equation (6) as a benchmark model by introducing cash dividend

Table 1: Variables description

Symbols	Type of variables	Surrogates	Calculation
MV_{it}	Dependent variable	Market value of firms	A closing share price at the end of year
BV_{it}	Independent variable	Book value of equity per share at end of year.	Total of shareholder equity (net assets) divide by shares.
RI_{it}	Independent variable	Residual income (abnormal earning)	$RI_{it} = X_t - (r_t * BV_{t-1})^{**}$ X_t : Current earning per share r : Free risk rate (average interest rate on commercial bank loans was used) BV_t : Book value of equity at the beginning of year
DV_{it}	Independent variable	Other relevant information (V_t)	The amounts of cash dividends divide shares

**The researcher calculates residual income as current period earnings (scaled by the number of shares outstanding) less the risk free rate (average interest rate on loan from commercial bank in year t taken from financial statistics of a central bank of Turkey) times book value per share at the beginning of year t (consistent with or like: Barth et al., 1999; Graham and King, 2000; Hodder et al., 2006; Higgins, 2011; Lee et al., 2012; Kuo, 2016)

per share as a surrogate for other relevant information (V_t) employed in previous studies such as Hand and Landsman (2005), Hodder et al. (2006), and Swartz et al., (2006). The following residual income model has been employed for panel data:

$$MV_{it} = \alpha_0 + \alpha_1 BV_{it} + \alpha_2 RI_{it} + \alpha_3 DV_{it} + \epsilon_{it} \quad (6)$$

Where,

α_0 an intercept, MV_{it} denotes the value per share for firm i at the end of the year t , BV_{it} denotes book value of equity per share for firm i at the end of the year t , RI_{it} denotes current residual income (abnormal earning) per share for firm i at the end of the year t , DV_{it} denotes cash dividends per share for firm i at the end of the year t , ϵ_{it} an error term (remainder disturbance).

These variables can be summarized in Table 1.

4.1. Sample and Selected Data

The study employed financial accounting data downloaded from Amadesus software for all firms listed on the ISE between 2007 and 2015. The program was used to collect information about: Closing share-price at fiscal year-end; book value per share (should be non-negative in any year); and cash dividends per share (should be paid during study years). The criteria yielded a final sample of 44 out of 111 firms. This study also analyzed the data based on the multi-regression method (cross-sectional and time series) by using SPSS software package version 22. Information about sample selection is presented in Table 2.

4.2. Limitation

The empirical findings of this study could be subject to a further argument for the following reasons: First, the complete identification of other information variables is a tremendous task which is not tackled in this study which employed cash dividend per share as a surrogate for other information variables. Second, the firms do not have similar business cultures and characteristics due to operating in different sectors. Third, limitation of size and ownership concentration of firms cast some doubt on the empirical results.

5. EMPIRICAL RESULTS AND DISCUSSIONS

Descriptive statistics include mean and standard deviation of all variables. The mean value of book value (BV) variable is the

Table 2: Data used (study sample)

ISE sectors	Number of firms used
Manufacture	16
Wholesale	17
Retail	6
Financial services	3
Real estate	2
Telecommunication	3
Total	44

highest (1.9326) among independent variables, while the mean value of residual income (RI) variable is the lowest (0.1789). The standard deviation expresses the variation in data. The highest value of standard deviation is 3.957271 which suggests that the great variation in market value of firms (MV) (dependent variable) is because of BV, followed by standard deviation of dividends (DV) which is 3.69192, while standard deviation of RI (0.59531) is the lowest. The summary information is presented in Table 3.

The correlation between different independent variables (BV, RI and DV) and the dependent variable (MV) is tested at 1% and 5% level of significance. It can be seen that BV and DV have a significant relationship with MV at 1% level of significance, while RI has a significant relation to MV at 5% level of significance. Regarding the correlation between independent variables, Table 4 shows the relationship between RI and BV to be insignificant at 5% level of significance, and the linkage between BV and DV to be insignificant at 5% level. There is, however, a significant link between RI and DV at 5% level of significance. This multicollinearity between these two independent variables does not invalidate the model. The summary information is presented in Table 4.

For choosing between the fixed effect and random effect method, essentially, the smaller the value of the Chi-square likelihood, the better (Field, 2009. p. 737). By calculating the value of Chi-square log likelihood, it has been found that the Chi-square log likelihood of the fixed effect model (0.000689) is smaller than Chi-square of random effect model (0.0579). This means that the fixed effect model should be used.

The hypothesis has been tested by the fixed effect regression using SPSS program. Table 5 displays the results of the analysis of independent variables and the dependent variable at 1% level of significance.

It can be observed from Table 5 that $R^2 = 63.2\%$, which indicates to the variation in share price (MV) during the sample period. In a sense, $R^2: 0.632$ and Adjusted $R^2: 0.631$ indicates that the predictive power of the model is high.

To figure out if this result is statistically significant or not, an F-test was applied, where results showed that P value of (F-statistic) is $(0.000) < 0.01$, which is significance.

By highlighting the regression coefficients, the results suggest that there is a direct relation between all independent variables (BV, RI, and DV) and the dependent variable (MV). The coefficient estimates on DV are consistently positive, and the coefficients estimates on RI and BV are consistently positive as well.

To test the nature of this relationship in terms of statistical significance, the researcher examined the regression significance of coefficients by using a t-test. The decision rule is comparing the P value with the level of significance at 0.01. If the $P < 0.01$, then the null hypothesis can be refuted, and the alternative hypothesis is accepted. This means that there is a statistically significant relationship between the independent variables and the dependent variable, and *vice versa*.

As depicted in Table 5, the P value for BV, RI, and DV are less than the significance level 0.01. This means that there is a statistically significant relationship between these variables and the market value of firms listed on the ISE, at the 0.01 level of significance. By focusing on (DV), there is a statistically significant relationship between cash dividends per share and the market value of firms listed on the ISE and as a result, the null hypothesis can

be rejected (dividends payment has no significant impact on the value of firms listed on the ISE), while the alternative hypothesis is accepted (dividends payment has significant impact on value of firms listed on the ISE).

To recognize the importance of cash dividend per share as (independent variable) and how it affects the market value of firms (dependent variable), the confidence interval employed, which suggests that an increase of one unit in independent variable (cash dividend per share) leads to an increasing in market value of firms at the level of 95%. The findings show that cash dividend per share affects the market value of firms more than RI and BV respectively. The summary information is presented in Table 5.

Dividend payments seem to affect the market value of firms. This finding does not support the irrelevance theory (in the context of the Turkish business environment), and is inconsistent with results of previous studies such as Modigliani and Miller (1969), Brennan (1971), Black and Scholes (1973), Hakansson (1982), and Ohlson (1995). Despite the irrelevance theory being logical in the circumstances of an efficient market, rational investors and perfect certainty, these assumptions are unrealistic in the real world of business where the imperfections of markets, such as tax, transaction cost, and information asymmetry between managers and shareholders, are observed. These hypotheses are the reasons the results of the study are contradictory.

The results of this study support the relevance hypotheses of dividend payments which is consistent with findings of prior studies such as Gordon (1963), Woolridge (1983), Baskin (1989), Fama and French (1998), Baker and Wurgler (2004), and Profflet and Bacon (2013). According to Frankfurter and Wood (1997, p. 31), dividend behavior is a “cultural phenomenon,” thus, dividends policy in advanced markets diverges in characteristics from that in emerging markets in terms of their lack of legal institutions and investor protection, as well as poor of corporate governance. All of these factors are major obstacles in front of stakeholders and investors in emerging economies (Baker and Jabbouri, 2016).

Based on these facts, it can be argued that cash dividend payments mitigate agency cost (interest conflict) by preventing managers from investing available free cash flow in projects with a negative-net-present-value. Consequently, the evidence suggests that dividend payments might convey information that overinvestment issues are alleviated, and that the use of cash dividend payments as a surrogate for “other information” variable (V_t) in Ohlson evaluation model (1995) is appropriate.

Table 3: Descriptive statistics

Variables	Mean±Standard deviation
MV	3.4858±10.53996
BV	1.9326±3.95271
RI	0.1789±0.59531
DV	1.5648±3.69192

MV: Market value, BV: Book value, RI: Residual income, DV: Dividend

Table 4: Correlation between variables

Variables	MV	BV	RI	DV
MV	1			
BV	0.00*	1		
RI	0.031**	0.123**	1	
DV	0.00*	0.0811**	0.054**	1

*Correlation is significant at the 0.01 level, **Correlation is significant at the 0.05 level.
MV: Market value, BV: Book value, RI: Residual income, DV: Dividend

Table 5: Regression coefficients of independent variables

Variables	Coefficient	Standard error	t-test	P value	95% confidence interval	
					Lower bound	Upper bound
Intercept	0.128953	0.083933	1536	0.131	-0.039922	0.297829
BV	0.154600	0.043331	3568	0.001	0.068117	0.241083
RI	0.223015	0.066586	3349	0.001	0.089988	0.356043
DV	0.721051	0.036864	19,560	0.000*	0.647182	0.794920

*Level of significance at 0.01. *Dependent variable: Market value of firms, $R^2: 0.632$, Adjusted $R^2: 0.631$, F-statistic: 10.97, Significant: 0.00. MV: Market value, BV: Book value, RI: Residual income, DV: Dividend

6. CONCLUSION

This study empirically investigated the impact of dividend payments on the value of firms for a sample of 44 businesses listed on the ISE. The study was carried out for a period of 9 years (2007-2015). The empirical estimation is based on the residual income model developed by Ohlson (1995) using fixed effect regression to analyze 1,584 observations.

The findings show that there is a significant positive relationship between cash dividends per share and a firm's value; furthermore, book value and residual income (abnormal earning) are significantly related to the value of firms. Therefore, the findings support the notion of the relevance proposition and are consistent with the agency theory explanation. In addition, the irrelevance theory is not applicable in the case of firms listed on the ISE.

REFERENCES

- Ajanthan, A. (2013), The relation between dividend payout and firm profitability among listed hotels and restaurant in Sri Lanka. *International Journal of Scientific and Research Publications*, 3(6), 1-6.
- Al Masum, A. (2014), Dividend policy and its impact on stock price a study on commercial banks listed in Dhaka Stock Exchange. *Disclosure of Economics and Business*, 3(1), 9-17.
- Al-Yahyaee, K.H., Pham, T.M., Walter, T.S. (2011), The information content of cash dividend announcements in a unique environment. *Journal of Banking and Finance*, (3), 606-612.
- Baker, H.K. (2009), *Dividend and Dividend Policy*. New Jersey: John Wiley & Sons.
- Baker, H.K., Jabbouri, I. (2016), How Moroccan managers view dividend policy. *Managerial Finance*, 42(3), 270-288.
- Baker, M., Wurgler, J. (2004), A catering theory of dividends. *The Journal of Finance*, 59(3), 1125-1165.
- Barth, M.E., Beaver, W.H., Hand, J.R.M., Landsman, W.R. (1999), Accruals, cash flow and equity values. *Review of Accounting Studies*, (3), 205-229.
- Baskin, J. (1989), Dividend policy and the volatility of common stocks. *The Journal of Portfolio Management*, 15(3), 19-25.
- Bhattacharya, S. (1979), Imperfect information, dividend policy, and "The bird in the hand" fallacy. *The Bell Journal of Economics*, 10, 259-270.
- Black, F., Scholes, M. (1974), The effects of dividend yield and dividend policy on common stock prices and returns. *Journal of Financial Economics*, 1(1), 1-22.
- Brennan, M. (1971), A note on dividend irrelevance and the Gordon valuation model. *The Journal of Finance*, 26(5), 1115-1121.
- Brennan, M.J. (1970), Taxes, market valuation and corporate financial policy. *National Tax Journal*, 23(4), 417-427.
- Chen, G., Firth, M., Gao, N. (2002), The information content of concurrently announced earnings, cash dividends, and stock dividends: An investigation of the Chinese stock market. *Journal of International Financial Management and Accounting*, 2, 101-124.
- Fama, E.F., French, K.R. (1998), Taxes, financing decisions, and firm value. *The Journal of Finance*, 53(3), 819-843.
- Field, A.P. (2012), *Discovering Statistics using IBM SPSS Statistics*. 4th ed. London: SAGE Publications.
- Frankfurter, G.M., Wood, B.G. Jr. (1997), The evolution of corporate dividend policy. *Journal of Financial Education*, 23(1), 16-32.
- Gordon, M.J. (1959), Dividends, earnings, and stock prices. *The Review of Economics and Statistics*, 41(2), 99-105.
- Gordon, M.J. (1963), Optimal investment and financing policy. *The Journal of Finance*, 18(2), 264-272.
- Graham, R.C., King, R.D. (2000), Accounting practices and the market valuation of accounting numbers: Evidence from Indonesia, Korea, Malaysia, the Philippines, Taiwan, and Thailand. *The International Journal of Accounting*, 35(4), 445-470.
- Hakansson, N.H. (1982), To pay or not to pay dividend. *The Journal of Finance*, 37(2), 415-428.
- Hand, J.R.M., Landsman, W.R. (2005), The pricing of dividends in equity valuation. *Journal of Business Finance and Accounting*, 32(3-4), 435-469.
- Higgins, H.N. (2011), Forecasting stock price with the residual income model. *Review of Quantitative Finance and Accounting*, 36(4), 583-604.
- Hodder, L.D., Hopkins, P.E., Wahlen, J.M. (2006), Risk-relevance of fair-value income measures for commercial banks. *The Accounting Review*, 81(2), 337-375.
- Hussainey, K., Mgbame, C.O., Aruoriwo, M.C.M. (2011), Dividend policy and share price volatility: UK evidence. *The Journal of Risk Finance*, 12(1), 57-68.
- Ilaboya, O.J., Aggreh, M. (2013), Dividend policy and share price volatility. *Journal Asian Development Study*, 2(2), 109-122.
- Irum, M., Rafique, M., Hassanc, A. (2012), Effect of dividend announcement on share prices of petroleum industry of Pakistan. *Journal of Basic and Applied Scientific Research*, 2, 6503-6511.
- Jakata, O., Nyamugure, P. (2015), The effects of dividend policy on share prices: Empirical evidence from the Zimbabwe stock exchange. *International Journal of Science and Research*, 4(10), 674-683.
- John, K., Williams, J. (1985), Dividends, dilution, and taxes: A signalling equilibrium. *The Journal of Finance*, 40(4), 1053-1070.
- Kadioglu, E., Telceken, N., Ocal, N. (2015), Market reaction to dividend announcement: Evidence from Turkish stock market. *International Business Research*, 8(9), 83-94.
- Kuo, C.Y. (2016), Does the vector error correction model perform better than others in forecasting stock price? An application of residual income valuation theory. *Economic Modelling*, 52, 772-789.
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny, R.W. (2000), Agency problems and dividend policies around the world. *The Journal of Finance*, 55(1), 1-33.
- Lee, S.C., Lin, C.T., Yu, M.T. (2012), A fractional cointegration approach to testing the Ohlson accounting based valuation model. *Review of Quantitative Finance and Accounting*, 41(3), 535-547.
- Lintner, J. (1956), Distribution of incomes of corporations among dividends, retained earnings, and taxes. *The American Economic Review*, 46(2), 97-113.
- Litzenberger, R.H., Ramaswamy, K. (1979), The effect of personal taxes and dividends on capital asset prices. *Journal of Financial Economics*, 7(2), 163-195.
- Majanga, B.B. (2015), The dividend effect on stock price- An empirical analysis of Malawi listed companies. *Accounting and Finance Research*, 4(3), 99-105.
- Miller, M.H., Modigliani, F. (1961), Dividend policy, growth, and the valuation of shares. *The Journal of Business*, 34, 411-433.
- Myers, J. (1999), Implementing residual income valuation with linear information dynamics, *The Accounting Review*, 74, 1-28.
- Ohlson, J.A. (1995), Earnings, book values, and dividends in equity valuation. *Contemporary Accounting Research*, 11(2), 661-687.
- Profflet, K.A., Bacon, F.W. (2013), Policy and stock price volatility in the U.S. equity capital market. *Journal of Business and Behavioral Sciences*, 25(2), 63-72.
- Rozeff, M.S. (1982), Growth, beta and agency costs as determinants of dividend payout ratios. *Journal of Financial Research*, 5, 249-259.
- Sharif, T., Purohit, H., Pillai, R. (2015), Analysis of factors affecting share prices: The case of Bahrain stock exchange. *International Journal of*

- Economics and Finance, 7(3), 207-216.
- Swartz, G.E., Swartz, N.P., Firer, S. (2006), An empirical examination of the value relevance of intellectual capital using the ohlson (1995) Valuation Model. *Meditari Accountancy Research*, 14(2), 67-81.
- Uddin, M.H., Chowdhury, G.M. (2005), Effect of dividend announcement on shareholders' value: Evidence from Dhaka stock exchange. *Journal of Business Research*, 7, 61-72.
- Walter, J.E. (1963), Dividend policy: Its influence on the value of the enterprise. *The Journal of Finance*, 18(2), 280-291.
- Woolridge, J.R. (1983), Dividend changes and security prices. *The Journal of Finance*, 38(5), 1607-1615.
- Yilmaz, A., Gulay, G. (2006), Dividend policies and price-volume reactions to cash dividends on the stock market: Evidence from the Istanbul stock exchange. *Emerging Markets Finance and Trade*, 42(4), 19-49.
- Yilmaz, A.A., Selcuk, E.A. (2010), Information content of dividends: Evidence from Istanbul. *International Business Research*, 3(3), 126-132.
- Zakaria, Z., Jorlah, M., Zulkafli, A.H. (2012), The Impact of dividend policy on the share price volatility: Malaysian construction and material companies. *International Journal of Economics and Management Sciences*, 2, 1-8.