

THE INFLUENCE OF FINANCIAL PERFORMANCE ON PAYOUT POLICY: A STUDY OF ESTONIAN FIRMS

Argo Teral, Oliver Lukason, Priit Sander¹
University of Tartu

Abstract

Payout (dividend) policy has been a controversial topic for decades. Theoretical and empirical literature has listed dozens of factors that could affect firm's payout decisions. Current paper analyses the influence of financial performance on firms' payout decisions based on a large sample of Estonian companies and covers the financial and economic crises period of 2008-2009. The results indicate that past financial performance indicators are poor predictors of future dividends (measured both by payout ratio and the value of dividends). The connection between the dividends paid and future earnings of the firm turned out to be remarkably stronger, i.e. dividends seem to possess some predictive power.

Keywords: payout policy, dividend policy, financial performance

JEL Classification: G35

Introduction

In year 2000 a unique tax reform was carried out in Estonia, the aim of which was to replace earned profit taxation with distributed profit taxation². Since year 2000 firms must pay income tax only on profit distribution³, special benefits, costs not connected with firm's commercial activities and possible hidden profit distribution (e.g. payments to residents of low tax rate territories (so-called off-shore regions), gifts). In practical terms the taxation of firm's profit was postponed to the moment when profit is distributed to owners. This means that amount of income tax paid by firm and tax income earned by state are dependent on the dividend decisions made on firm level. Although the share of direct taxes (especially corporate income tax) is low in Estonian state budget, previous discussion outlined the necessity to know which factors influence firms' profit distribution decisions. It is easier for government to compose both, positive and negative supplementary budgets, in case firms'

¹ Argo Teral, Tartu University Economics and Business Administration master's program graduate from year 2011.

Oliver Lukason, Research Fellow, University of Tartu, Faculty of Economics and Business Administration, Narva Road 4-A307, Tartu 51009, Estonia. E-mail: oliver.lukason@ut.ee

Priit Sander, Associate Professor, University of Tartu, Faculty of Economics and Business Administration, Narva Road 4-A305, Tartu 51009, Estonia. E-mail: priit.sander@ut.ee

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² Tax reform in FYR of Macedonia in 2008 had similar characteristics.

³ Initially it affected only dividends, but since year 2009 it is also applied for payments to owners through repurchase of own shares, share capital reduction or firm liquidation.

payout patterns are known. As supplementary budgets are mainly common to economic recession, then current article focuses on years 2008-2009, when Estonia as the whole world witnessed one of the most extensive crisis since Great Depression.

The objective of current paper is to search connection between firms' payouts to owners and changes in firms' financial indicators during financial crisis (i.e. years 2008 and 2009). Financial indicators are chosen as determinants of payouts as other determinants (e.g. motives of owners) cannot be detected indirectly (see discussion in next section). The paper is structured as follows. Firstly, based on relevant literature an overview will be given of major aspects and factors that firms take into account when designing their dividend policy⁴. Separate attention will be drawn to suggestions in previous literature, which could be applied in case of Estonian income tax system peculiarities. This is followed by empirical analysis, which includes description of data and study design succeeded by major results from study and their discussion. The paper ends with conclusion part.

1. A theoretical overview of factors influencing corporate dividend policy

Miller and Modigliani (1961) argued that in the absence of any market imperfections and frictions, dividend policy is irrelevant. However, in reality those conditions are not fulfilled. The three most common market imperfections that have been investigated in conjunction with corporate dividend policy are: taxes, asymmetric information and agency costs.

Differential tax treatment of dividends and capital gains is one of the reasons why companies may prefer to pay (or not to pay) cash dividends. Brennan (1970) was among first scholars to present a model of optimal dividend policy under tax differential between dividends and capital gains. Different tax treatment of various types of investors creates so-called tax clientele effects (see e.g. Elton and Gruber 1970, Kalay 1982), which also impacts the dividend policy.

Asymmetric information is the second common market imperfection. It has been argued that companies use dividend policy to convey private information about the firm's future prospects to the market (see e.g. Miller and Rock 1985, John and Williams 1985). A recent study in London Stock Exchange showed that dividends have less information content than earnings in periods of growth and stability, but more in periods of economic adversity (Bozos et al. 2011).

Agency costs arising due to the conflict of interest between different claimholders represents the third commonly cited market imperfection. There are many different explanations how agency costs affect dividend policy. For example, Easterbrook (1984) argues that companies pay dividends to overcome the agency problem stemming from the separation of ownership and control. Jensen (1986) stated that

⁴ Relevant literature commonly applies term "dividend policy", although the concepts can in most cases be easily applied in the context of different types of payouts.

cash dividends help to reduce potential overinvestment problem in companies. Debt covenants that are written to reduce the conflict of interest between shareholders and bondholders may also dictate dividend policy of company (Smith and Warner 1979).

While transaction and flotation costs also represent one type of market imperfections, there are practically no papers that apply only these as the main factors influencing dividends policy. Other explanations why firms pay dividends include behavioral explanations, the firm life-cycle theory of dividends, and the catering theory of dividends (Baker et al. 2011).

Several papers have focused on the behavioral aspects to explain why companies pay dividends. It has been argued that dividends help investors to retain self-control in consumption decisions (Shefrin and Statman 1984). Also, several other behavioral explanations (e.g. involving habits, bounded rationality) have been proposed (see Frankfurter and Lane 1992).

The firm life-cycle theory of dividends contends that the pattern of cash dividends changes over a firm's life cycle (Mueller 1972). Young firms rarely pay dividends, while mature firms usually distribute some if not all of their free cash flows to investors. Empirical research usually confirmed the existence of such pattern (see e.g. Fama and French 2001, DeAngelo et al. 2006).

The catering theory of dividends (see Baker and Wurgler 2004) stresses the importance of investor sentiment in dividend policy decisions, i.e. companies adjust their dividend policy according to whether shares of existing dividend-paying firms are trading at a premium or discount relative to those of non-dividend-paying firms.

The empirical evidence is generally rather mixed (see e.g. Frankfurter and Wood 2002, Allen and Michaely 2003) and none of the dividend theories has been unequivocally verified. In studying dividend policy empirically, researches rely mainly on two approaches (Weigand and Baker 2009):

- Statistical analysis of published financial data,
- Survey methodology (interviews and questionnaires)⁵.

A typical list of key determinants that influence dividend policy based on empirical studies includes for instance the level of current and expected earnings, stability of earnings, availability of cash, investment opportunities, the ability to refinance debt, pattern of past dividends. However, dividend policy is also sensitive to such factors as corporate governance or legal environment (Baker et al. 2011).

This last argument suggests that there is a need to study dividend policy of Estonian companies on both theoretical and empirical level due to Estonia's unique corporate income tax system. Hazak (2007) constructed a theoretical model of a company operating under uncertainty in a binomial framework and argued that if the

⁵ An excellent review of such type of studies can be found in Baker et al. 2011.

probability of losses is zero, it is optimal under distributed profit taxation to distribute profit when earned equally to or less than investor's consumption level. However, if the probability of losses is noticeable, the company value for the investor is maximized if profit is fully distributed when earned. This actually suggests that during the financial crises, when the probability of losses increases, the dividend payout ratio should rise. While it is well known that managers are reluctant to reduce dividend payments, there is some empirical evidence that this reluctance will drop when facing financial distress (DeAngelo and DeAngelo 1990).

2. Empirical analysis of the connection between payout policy and financial indicators in Estonian firms

2.1. Data for analysis and study design

For conducting current analysis, financial data of firms from Estonian Commercial Register (ECR) has been applied. Based on EMTAK 2008⁶, the largest 14 industries have been chosen for analysis, which are: agriculture, forestry and fishing; mining and quarrying; manufacturing; electricity, gas, steam and air conditioning supply; water supply; sewerage, waste management and remediation activities; construction; wholesale and retail trade, repair of motor vehicles and motorcycles; transportation and storage; accommodation and food service activities; information and communication; financial and insurance activities; real estate activities; professional, scientific and technical activities; administrative and support service activities. The analysis does not include the following industries: public administration and defense; compulsory social security; education; human health and social work activities; arts, entertainment and recreation; other service activities; activities of households as employers, undifferentiated goods and services producing activities of households for own use; activities of extraterritorial organizations and bodies. The excluded industries do not play an important role in Estonian economics (as share from GDP) and the number of firms in those sectors is also relatively low.

The analysis includes firms that have submitted financial reporting to ECR. In total there are 301 869 observations in analysis, i.e. this is the amount of financial year reports submitted to ECR in period from 2006 to 2009⁷. The number of firms in analysis differs through years, as new firms have been created in the viewed period. The number of firms has increased by 79% from 2005 to 2009. The initial dataset is limited to firms being economically active, which is achieved by excluding all cases where sales revenue equals zero in specific year. The selection of economically active firms narrows database to 202 057 observations. Such limitation is necessary, as the inclusion of economically inactive firms can bring to serious faults and anomalies.

⁶ *Estonian Classification of Economic Activities* from year 2008, which is the national version of NACE Rev.2 (*Statistical Classification of economic activities in the European Community*).

⁷ As data was obtained in spring 2011, then the total number of annual reports available in February 2012 could be higher, but it is highly likely that additional reports will not influence the results of current study.

As the next step it is important to create a framework for grouping firms, as the theoretical overview revealed that firms with varying financial health should be treated differently. The easiest way would be to divide firms to two groups based on the threat of distress. A limitation for such action is that in the circumstances of recession financial indicators of most firms in some specific sector might worsen, so it is necessary to distinguish between those, which perform worse than sector and those which do not. This will lead to creating three distinct groups outlined as follows:

- 1) Firms, in case of which financial situation in specific year declined more than the average decline of industry for the same year (i.e. Group I).
- 2) Firms, in case of which financial situation in specific year declined, but less than the average decline of industry for the same year (i.e. Group II).
- 3) Firms, in case of which financial situation improved compared to previous year (i.e. Group III).

Analysis is followed by creating an algorithm to divide firms to three groups outlined previously. As there is no single financial indicator available to achieve this, then some complex framework should be chosen. A traditional instrument to check deterioration in firm's performance is bankruptcy model, but as it is not possible to determine the reliability of specific models, then it is reasonable to conduct grouping based on several models. Because of that, different bankruptcy models will be applied to find out whether firm's performance has deteriorated compared to previous year. The choice of models is based on several considerations. Firstly, model should be Estonia-specific or cited in literature. Secondly, data should be available to calculate model variables. Because of previously given aspects the analysis is limited to the usage of following bankruptcy models:

- 1) Discriminant model of Estonian firms (Lukason 2006: 56).
- 2) Logit-model of Estonian firms (Lukason 2006: 58).
- 3) Discriminant model (Z-Score) of USA firms (Altman 1968: 594).
- 4) Discriminant model of Finnish firms (Laitinen and Kankanpää 1999: 90).
- 5) Logit model of Polish firms (Ciesielski et al. 2005: 4).

The grouping was conducted according to following logic. For all firms in analysis five bankruptcy scores were calculated for each year, which was followed by calculating the same scores for industries. Bankruptcy scores for specific year were compared with that for previous year and in case at least three bankruptcy scores indicated an improvement in financial situation, then firm was attributed to Group III. In case at least three scores indicated deterioration in results, then it was additionally studied, whether the deterioration was less or more than for industry, which in turn determined the final group membership (Group I or Group II). Derived from the grouping algorithm each firm could be in different groups in different years.

As digital information about payouts is not available through ECR, then for determining firm payout amounts the following two algorithms have been created by authors. As payout, authors consider declared dividends and share capital reduction

(i.e. results of Equation 2 are deducted from results of Equation 1). The equation for dividends was the following:

$$(Eq. 1) \text{ dividends} = (\text{retained earnings}_{t-1} + \text{net income}_{t-1}) - \text{retained earnings}_t$$

In the profit distribution proposal firms can decide to use profit for different purposes. For instance it is possible to increase share capital, increase reserve capital, increase other reserves, buy back own shares, initiate stock dividend issue, cover losses of previous years. It is not possible to determine buy back of own shares and stock dividend issue based on available data (balance sheet and income statement variables). At the same time it is possible to check increase of share capital and reserves. Derived from previous, following restrictions are applied to Equation 1:

- In case firm's share capital increased compared to previous year, then given positive change will be deducted from the sum of dividends;
- In case firm's compulsory and other reserves increased compared to previous year, then given positive change will be deducted from the sum of dividends;
- Negative and very small dividends will be eliminated from dataset.

To find out reduction in share capital or reserves, the following equation will be used:

$$(Eq. 2) \text{ reduction of share capital and reserves} = (\text{share capital}_t - \text{share capital}_{t-1}) + (\text{total reserves}_t - \text{total reserves}_{t-1})$$

The reduction of share capital and reserves takes place on following conditions:

- Negative change of share capital means its reduction, positive change increase;
- Negative change of reserves means its reduction, positive change increase;
- The sum of retained earnings and net income should be more than zero, otherwise reduction of share capital is not possible, as firm's equity would not be in accordance with Estonian laws.

Beside the value of payout, payout ratios (PR) will be used, which indicate the proportion of earnings paid out to shareholders as dividends. It is usually calculated by dividing dividends (Div) with the net income (NI)⁸:

$$(Eq. 3) \quad PR = \frac{Div}{NI}$$

There are two aspects which should be kept in mind when interpreting the numerical value of the payout ratio calculated by using Equation 3. Firstly, companies can make cash payments to shareholders also in other forms beside cash dividends (like share repurchases or payments associated with share capital reductions). Secondly, dividends can be paid out also from the retained earnings of previous years. Therefore in some cases payout ratio can exceed 100% (e.g. company distributes all

⁸ Although denoted with *Div*, in current paper all payouts as described earlier in this section, not only dividends, are considered. Also, *Div* payment takes place at time *t*, whereas *NI* refers to profit earned in previous period, i.e. *t-1*.

its net income from last year plus some proportion of its retained earnings from previous years), and in some cases the value of payout ratio can also be negative even though company pays dividends (e.g. company earned a loss in the last year, but paid out some dividends using retained earnings from the previous years). Usually the value of payout ratio remains between 0% and 100%.

Derived from the objective of paper, changes in financial indicators will be compared with payout and payout ratio. The relationship will be tested with different time lags – relationship between period t payouts and payout ratios with period $t-1$, period t and period $t+1$ financial indicators. The method for determining relationship is correlation analysis (with Pearson formula). The financial indicators (independent variables) used in correlation analysis have been chosen based on their usage in literature and possible connection with payout and payout ratio. Namely, they are (i.e. Indicators):

- Change in debt to asset ratio (i.e. ΔDA);
- Change in business profit⁹ and sales ratio (i.e. ΔBS);
- Change in net profit and sales ratio (i.e. ΔNS);
- Change in current assets and current liabilities ratio (i.e. ΔCAL);
- Change in sales (i.e. ΔS);
- Change in business profit (i.e. ΔBP);
- Change in net profit (i.e. ΔNI).

$$\frac{Value_n - Value_{n-1}}{|Value_{n-1}|}$$

Change will be calculated as $\frac{Value_n - Value_{n-1}}{|Value_{n-1}|}$, where $Value_n$ denotes the value of specific variable or ratio for the viewed year and $Value_{n-1}$ for the year before viewed year. The usage of absolute value (i.e. $|Value_{n-1}|$) in denominator is necessary, as some financial data can have negative values and this could lead to misinterpretation of changes. The usage of changes has several reasons. Values from balance sheet and income statement, but also financial ratios are static figures and they do not reflect changes in firm's performance. Secondly, in case of value changes it can be noted, whether the situation has improved or not, whereas in case of balance sheet and income statement variables or financial ratios it is not possible to do it without comparison to some base figure. Moreover, there are no uniform concepts available, what certain values of financial statement variables or ratios should signal.

2.2. Results of analysis and discussion

The analysis is followed with three Groups outlined in previous chapter and all results have also been summarized in Table 1. Firstly, Group I is analyzed, in case of which economic situation declined more than the average decline of industry. First sample includes 2377 firms which made payouts in year 2008. Year 2008 payouts

⁹ Estonian profit statement does not use EBIT and that is why business profit is being used, which is calculated by deducting all operational costs from all sales. With reservations business profit can be seen as EBIT.

have no statistically significant relationship with year 2007 and year 2008 Indicators. At the same time there are several statistically significant relationships between year 2009 payout or payout ratio and Indicators. Namely, payouts are related to ΔS , ΔBP and ΔNI , whereas all relationships are positive. The strongest is the relationship between payouts and business profit change. The same indicators have also statistically significant relationship with payout ratio, whereas all relationships are remarkably stronger, being twice as strong as for payouts. The analysis was followed by studying the firms that made payouts in year 2009 (second sample of 2849 firms), but there was no statistically significant relationship between year 2008 payouts or payout ratios and year 2009 Indicators. This follows the same tendency as for firstly analyzed year 2008 payouts, but at the time of conducting the analysis authors did not have data to check the relationship between year 2009 payouts or payout ratios and year 2010 financial indicators.

Secondly, Group II is analyzed, in case of which economic situation declined, but less than the average decline of industry. As for previous group, the first sample consists of firms making payouts in 2008 (695 firms). Year 2007 and 2008 Indicators have only one statistically significant positive relationship with year 2008 payouts or payout ratios, being between year 2008 ΔDA and year 2008 payout, but the relationship is not strong. As with Group I, several statistically significant relationships are detected with year 2009 Indicators. Firstly, payout ratios are positively related to ΔDA , but the relationship is very low. There are two strong negative relationships between year 2009 Indicators (ΔNS , ΔNI) and payout ratios of year 2008. It can be concluded that decrease in profitability results in the increase of payouts (or at least their preservation on the same level), i.e. for this group of firms payout policy remains unchanged or changes positively during financial crisis. When using year 2009 payouts (853 firms), then the only result is weak positive relationship between year 2009 payout ratio and year 2008 ΔNI .

Thirdly, Group III is analyzed, in case of which economic situation improved compared to previous year. There are 2616 firms, which made payouts in year 2008 in Group III. Following the pattern of Group I, there are no statistically significant relationships between year 2008 payouts or payout ratios and Indicators. Exactly as for Group I, there are positive relationships between ΔS , ΔBP and ΔNI from year 2009 and year 2008 payouts. Still, those relationships are very weak. Similarly to Group II, the only statistically significant negative relationship is between year 2009 ΔNI and year 2008 payout ratio, but it is not strong. What concerns year 2009 payouts and payout ratios, then there are no statistically significant relationships with Indicators from years 2007-2009.

The empirical analysis conducted by authors indicates that Estonian companies did not rely on past values of this specific set of financial indicators when making their payout decisions. This result contradicts with previous empirical studies that applied the data of Estonian largest companies (e.g. Sander and Trumm 2006).

Table 1. Significant variables and correlation coefficients from analysis (sig. = 0.05)

Firm group	Year 2008		Year 2009	
Indicator year ¹⁰	Payouts	Payout ratios	Payouts	Payout ratios
I				
2006/2007	-	-		
2007/2008	-	-	-	-
2008/2009	ΔS (0.230), ΔBP (0.348), ΔNI (0.300)	ΔS (0.573), ΔBP (0.849), ΔNI (0.729)	-	-
II				
2006/2007	-	-		
2007/2008	ΔDA (0.171)	-	-	ΔNI (0.128)
2008/2009	ΔDA (0.079)	ΔNS (-0.795), ΔNI (-0.808)	-	-
III				
2006/2007	-	-		
2007/2008	-	-	-	-
2008/2009	ΔS (0.095), ΔBP (0.098), ΔNI (0.089)	ΔNI (-0.186)	-	-

Source: ECR database, compiled by authors.

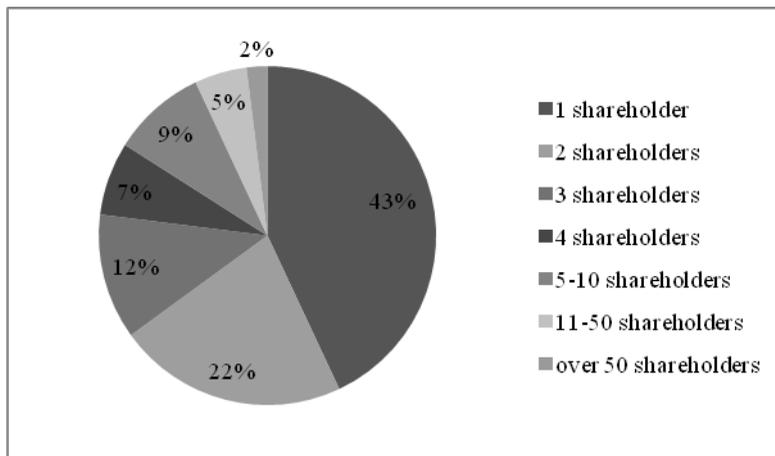


Figure 1. Distribution of Estonian public companies according to the number of shareholders (Eesti Väärtpaberite Keskregistri Statistika – Investor ja Ettevõtja, Sügis 2004).

¹⁰ Notation of years in form t/t+1 (e.g. 2006/2007) means the change of statistically significant variable in specific row between given years, i.e. between years 2006 and 2007.

There could be several reasons why past values of financial indicators turned out to be not important. First, our sample mainly consisted of micro companies (83-92% of all companies in our sample). It has been argued (Syrjä et al.: 2011: 633) that the managers and owners of small companies do not conduct in-depth long-term financial planning in their firms. In such companies payout decisions are irregular and mainly driven by the owners' need for money. Surveys conducted in Estonia (Sander and Trumm 2006, Kaarna et al. 2010) suggest that most important factor influencing dividend decision is the cash need of (controlling) shareholders. For instance in Canada, firms tailor their dividend policy to meet the preferences of controlling shareholder (Baker et al. 2011). Similar behavior can also be observed in other countries. In Estonia, a company can pay out dividends only if the majority of votes at the general shareholder meeting support it. Therefore the dividend policy is essentially under the control of controlling shareholder. Since most Estonian companies have only one or two shareholders (see Fig. 1), any model or analysis that relies only on company level data and does not take into account different characteristics of owners cannot provide comprehensive explanation to the observed patterns in dividends.

Second reason for the lack of connection between firm's past financial performance and payout decisions could be the specific nature of our sample period. During the crisis the financial health and main financial indicators of the company could change very quickly, even during a couple of months. In such an environment, decisions based on outdated data can easily lead company to bankruptcy. In practice, dividend decisions are usually made 4-6 month after the end of financial year. At that time the company may already know the financial results of the first half-year and therefore it is logical that available new information will be taken into account. Our results confirmed that companies rely on the expected future earnings when making payout decisions (as was indicated also in the theoretical part of the paper). However, for different groups the relationship between dividends and next year's net profit was different. In case of Group I, which included companies that relatively suffered the most due to crisis, there is semi-strong positive relationship between dividends and next year's net profit, which indicates that in this group dividends are mainly paid by companies which financial health was expected to get better. This result casts some doubts on the theoretical proposition made by Hazak (2007) about the relationship between the dividends and the expected probability of loss. However, our analysis was not specifically designed to test such proposition and the next year's loss/profit may not be the best indicator for the expected probability of loss. In case of other groups the relationships between dividends and next year's net profit were either weaker (while still statistically significant) or absent. It is important to notice, that due to the specific features of corporate income taxation system in Estonia, distribution of dividends affects negatively the next period's net profit, i.e. if company decides to pay out dividends this occurs during the next financial year and the taxes associated with the dividends reduce the net profit of that year. This fact actually increases the predictive power of dividends. It is also interesting to note that for Group II, which included companies with less deteriorated financial health, the relationship between payout ratio and next year's

profit figures was strongly negative. The authors are not able to offer conclusive explanation for such result based on current analysis.

Nissim and Ziv (2001) found that dividend changes are positively related to changes in earnings in each of the two years after the dividend change. Dividends' predictive power has been documented also in a few other papers (see e.g. Anderson 2011). However, there is considerable number of empirical papers confirming the opposite (see e.g. Grullon et al. 2003, DeAngelo et al. 1996, Benartzi et al. 1997, Lie 2004). In overall, our results show that dividends are connected with the future earnings of the company, although the relationship was not present for all years and types of firms. Our results still indicate that dividends could be used for predicting future earnings.

Conclusions and implications

Current study focused on the connection between firm's financial performance indicators and payout policy on the example of all Estonian firms. Correlation analysis between different changes in financial indicators and firm's payout indicators (payout amount and payout ratio) was conducted in a way that relationship was sought between previous, same and next year financial performance indicators and payout indicators. For the analysis firms were grouped to different subsets dependent on their financial health changes calculated using the help of bankruptcy models. Results indicate that mostly there is connection between changes of next year's financial performance indicators and payout indicators of current year. Namely, dependent on viewed year, changes in different profit levels, sales and capital structure were found to be statistically significant variables.

The results of current study casted some doubt whether increase in probability of loss (measured in our study by using different bankruptcy models) will indeed lead to larger payouts to shareholders. However since the probability of loss cannot be directly measured, the choice of proxies could heavily influence the results, and therefore a need for future research exists in this avenue.

Current study presents some important implications for state budget composition. Firstly, most connections in current study were found to be between certain year payouts and next year's financial results, i.e. firms' financial information from past years cannot be applied during state budget composition to forecast corporate income tax. Secondly, most of the connections found are not strong and to some extent unexplainable or controversial with previous theoretical findings, which also reduces their applicability.

Our suggestion for future research would be the inclusion of characteristics of major shareholders into the analysis of corporate dividend decisions. As dividend policy is under the control of major shareholder, his decisions are more important in explaining the dividend policy of company than financial indicators of the company.

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