

# Dividend Policy, Corporate Governance, and the Capital Markets

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## Abstract:

This paper examines whether there is a difference between the dividend policies practiced by firms operating in countries with different financial systems, namely, bank-based and market-based systems. Our results show that the dividend payout ratio is significantly higher for bank-based countries. When firms are grouped according to whether they are in market-based countries or in bank-based countries, the level of investor protection is positively related to dividend payout in market-based financial systems but negatively related to dividend payout in bank-based financial systems.

## I. INTRODUCTION

Currently, there is no consensus in academics why firms pay dividends, especially given the fact that dividends are taxed more heavily than capital gains. Black (1976) describes the dividend phenomena as the "dividend puzzle". Under the assumption of a frictionless financial market, Miller and Modigliani (1961) show that dividend policy is irrelevant to the valuation of a firm. However, they also point out that relaxation of either of two crucial assumptions, i.e., no taxes and no asymmetric information, can make dividend policy relevant in the valuation of shares.

Battacharya (1979) develops a model where cash dividends function as a signal of firms' expected cash flows in an imperfect-information setting. Rozeff (1982) describes a model of optimal dividend payout where increased dividends lower the agency costs incurred by the conflict of interests between shareholders and managers. He shows that dividend policy depends on revenue growth, beta, the fraction of equity held by insiders, and the number of common stockholders. Jensen (1986) uses a free cash flow theory to explain dividends as a mechanism to reduce agency costs through a reduction of free cash flows. Jensen and Meckling (1976) also consider dividends as a mechanism to alleviate the agency problem between shareholders and managers.

Moh'd, Perry, and Rimbey (1995) extend Rozeff (1982)'s study and show that managers appear to adjust the dividend payout in response to the agency costs both through time and across firms. Chen and Steiner (1999) show that there exists an inverse relationship between the level of dividends and managerial ownership – the substitution effect of the two monitoring methods. Jensen, Solberg, and Zorn (1992) also show the inverse relationship between dividend payments and the level of insider ownership.

By comparing the dividend practices in common law countries and civil law countries, La Porta, Lopez-de-Silanes, Shleifer, and Vishny (LLSV, 2000) provide a support for the agency based model of dividends. They report that firms in better shareholder protection countries pay

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higher dividends. They interpret the result as minority shareholders can force the managers to pay dividends when the level of investor protection of the country is high. Jiraporn (2004), however, shows the opposite result: firms with more restricted shareholder rights pay higher dividends. One possible explanation is that he only investigates the firms in the U.S. Bancel, Bhattacharyya, and Mitto (2005) survey the managers of European firms and their results do not support LLSV's contention that dividend policy is influenced primarily by the quality of legal system. Instead, they say, dividend policy is determined by a complex interaction of the firm's ownership structure and the legal and institutional structure of its home country. Using the anti-director rights index and expropriation index of LLSV (1998), Pinkowitz, Stulz, and Williamson (2006) show that the relation between dividends and firm value is generally weaker in countries with stronger investor protection. However, when they analyze countries with poor accounting practices, dividends contribute more to firm value in countries with stronger investor protection. They find their results to be quite puzzling.

Aivazian, Booth, and Cleary (2003a, 2003b) emphasize country factors in dividend policies. They compare the dividend policy of companies from eight emerging markets to the policies of US firms and show that market structure of these developing countries makes dividends a less viable mechanism for signaling and for reducing agency costs than their US counterparts. Dewenter and Warther (1998) compare dividend policies of U.S. and Japanese firms and show that Japanese firms experience smaller stock price reactions to dividend omissions and initiations possibly due to institutional differences in the structure of corporate ownership and the nature of corporate group interactions which shows the importance of the financial market situation in each country. Banerjee, Gatchev, and Spindt (2006) show another support for the importance of the capital market by analyzing the relationship between the stock market liquidity and the propensity to pay dividends. They find that owners of less liquid common stock are more likely to receive cash dividends, and over time, the notable increase in US stock market liquidity explains most of the declining propensity of firms to pay dividends. Baker and Wurgler (2004) propose a catering theory of dividends that the decision to pay dividends is driven by prevailing investor demand for dividend payers which also emphasize the role of the capital market in terms of the market demand for dividends.

In this paper, we attempt to provide an explanation to the dividend puzzle by incorporating both capital market development and agency theory approach. Following Kwok and Tadesse (2006)'s method, we group the countries according to whether the financial systems are bank-based or market-based. We then examine whether dividend payouts are associated differently to various factors for the two groups of firms.

The paper is organized as follows. In section II, we discuss the data and methodology. The results of the empirical tests are provided in Sections III. The conclusion of the paper is in Section IV.

## **II. DATA AND METHODOLOGY**

### **A. Data description**

The data used in the analyses are from the WorldScope and World Bank database. A dummy variable, MKT, is used to distinguish between the market-based and the bank-based

financial system. MKT is one if a country has a market-based system and zero otherwise<sup>1</sup>. Investor protection index (INVESTOR\_P) is measured by the principal component of the indices of private enforcement and the anti-director rights. The index is obtained from La Porta, Lopez-de-Silanes, and Shleifer (2006).<sup>2</sup> Dividend tax advantage (DIV\_T) compared to capital gains tax is from LLSV (2000). As dividends are treated preferentially compared to capital gains in terms of taxes levied on money received by investors, dividend tax advantage is higher. Leverage (LVRG) is the book value of short-term plus long-term debt divided by the book value of total assets from the WorldScope. Sales growth (SALES\_G) is the three-year arithmetic average of growth rates in sales from the WorldScope. Cash dividends divided by cash flow<sup>3</sup> (DIV) is extracted from the WorldScope. Market capitalization (MKTCAP), which is calculated by dividing the stock market capitalization by the GDP, is the size of the stock market and the data are obtained from the World Bank database. Trading turnover (TRADING) is from the World Bank database and it is calculated by dividing the total value traded in the stock market by the GDP. Following the screening procedure in LLSV (2000), we deleted the firms that are listed in stock exchanges of former socialist countries, firms listed in Luxembourg's stock exchange, firms listed in stock exchanges of countries with mandatory dividend policies. We also deleted financial and utility firms, state-owned enterprises, and firms with missing sales, dividends, cash flows, common equity, or net income. Again, as in LLSV (2000), firms with net income or cash flows less than or equal to zero are also deleted. Classified shares are also deleted. Finally, to remove outlier firms, we deleted firms whose sales are less than or equal to zero, whose dividends are less than zero or greater than sales, whose common equity is less than or equal to zero, whose sales growth rate is less than or equal to negative hundred percent or greater than or equal to three hundred percent, or payout ratio is greater than 500%.

The summary statistics of the above variables is in Table I, first for the whole sample and then for each financial system. The investor protection score scales from 0 to 10 and the average is 6.93. The average of dividend tax advantage is 0.72 and the median is 0.70 which is comparable to the median of 0.83 in LLSV (2000) when the maximum is 1.08 and the minimum is 0.40. The mean leverage is 22%. The average ratio of dividends over cash flows is 13%, but the median is 8% which is lower than LLSV (2000)'s median of 11.77%. The average sales growth rate is 24%, but the median is only 6%, so we know that the average is skewed by higher growth firms. The range of market capitalization and trading turnover is quite large. The average market capitalization is 0.78 with the minimum of 0.07 and the maximum of 1.44, and the average trading turnover is 0.49 with the minimum of 0.01 and the maximum of 1.47.

Market-based countries have markedly and significantly higher numbers in the investor protection, the market capitalization, and the trading turnover than those of the bank-based countries.

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<sup>1</sup> We follow Kwok and Tadesse (2006) for the distinction between the bank-based system and the market-based system. Bank-based countries are Argentina, Austria, Belgium, Columbia, Ecuador, Finland, France, Germany, Greece, India, Indonesia, Ireland, Israel, Italy, Japan, New Zealand, Norway, Pakistan, Portugal, Spain, and Venezuela. Market-based countries are Australia, Brazil, Canada, Chile, Denmark, Hong Kong, South Korea, Malaysia, Mexico, Netherlands, Peru, Philippines, Singapore, South Africa, Sweden, Switzerland, Thailand, Turkey, UK, and USA.

<sup>2</sup> La Porta et al. (2006) examine the effect of securities laws on stock market development. They show that securities laws affect stock market development mainly through private enforcement facilitated by both extensive disclosure requirements and standards of liability rather than public regulatory enforcement.

<sup>3</sup> We only report the results of regressions using cash dividends divided by cash flow as a dependent variable. Cash dividends divided by sales, earnings, or price produce similar results and can be provided upon request.

Correlations among the above variables are in Table II. Since all the independent variables are statistically significant at 1% level, in our analysis, we have taken steps to alleviate some of the potential problems due to multicollinearity. Investor protection is negatively correlated with dividend tax advantage. As shown in the Table I summary statistics, the stock markets in market-based countries are on average larger in terms of market capitalization and have a higher turnover rate. To reduce potential of multicollinearity problem, we either use the investor protection variable or the market-related variables, or the investor protection variable and only one of the market-related variables in the regression models. Dividend tax advantage is negatively correlated with market capitalization and trading turnover. It seems that as the capital markets develop, capital gains are given a more preferential treatment. Table II shows that investor protection is negatively correlated with dividend payments, and the elaboration of this point is presented in section III.

Though the absolute magnitude is low, the leverage is negatively correlated with market capitalization and trading turnover. Also with low magnitude, the dividend-cash flow ratio is negatively correlated with market capitalization and trading turnover which supports information-related explanation of dividend payments because the need to signal is higher in less developed markets where information asymmetry is higher. As expected, the market capitalization and trading turnover is highly correlated, so, as mentioned, they will not be used together in the regression analyses.

#### B. Methodology

First, the OLS regression of the following model will be performed for all the firms in the sample using a dummy variable to distinguish between the market-based and the bank-based financial system.

$$DIV_t = \alpha + \beta_1 MKT_t + \beta_2 DIV\_T_t + \beta_3 LVRG_t + \beta_4 SALES\_G_t + \varepsilon_t, \quad (1) \text{ where}$$

$DIV_t$  is cash dividends divided by cash flow in year  $t$ ,

$MKT_t$  is a dummy variable which is one if a country has a market-based system,

$DIV\_T_t$  is the dividend tax advantage,

$LVRG_t$  is the leverage ratio,

$SALES\_G_t$  is the three-year arithmetic average of the growth rates in sales, and

$\varepsilon_{it}$  is an error term.

Then, the following regressions are performed without the dummy variable. The market capitalization, the trading turnover, and investor protection are separately included in the regression equations as follows.

$$DIV_t = \alpha + \beta_1 MKTCAP_t + \beta_2 DIV\_T_t + \beta_3 LVRG_t + \beta_4 SALES\_G_t + \varepsilon_t, \quad (2)$$

$$DIV_t = \alpha + \beta_1 TRADING_t + \beta_2 DIV\_T_t + \beta_3 LVRG_t + \beta_4 SALES\_G_t + \varepsilon_t, \quad (3) \text{ or,}$$

$$DIV_t = \alpha + \beta_1 INVESTOR\_P_t + \beta_2 DIV\_T_t + \beta_3 LVRG_t + \beta_4 SALES\_G_t + \varepsilon_t. \quad (4)$$

Then, two of the three variables are used as follows.

$$DIV_t = \alpha + \beta_1 INVESTOR\_P_t + \beta_2 MKTCAP_t + \beta_3 DIV\_T_t + \beta_4 LVRG_t + \beta_5 SALES\_G_t + \varepsilon_t \quad (5)$$

or,

$$DIV_t = \alpha + \beta_1 INVESTOR\_P_t + \beta_2 TRADING_t + \beta_3 DIV\_T_t + \beta_4 LVRG_t + \beta_5 SALES\_G_t + \varepsilon_t \quad (6)$$

Then, the same procedure will be performed first to the sub-group of market-based countries and then the second sub-group of bank-based countries.

### III. REGRESSION RESULTS

#### A. The whole sample

Table III shows the regression results for the whole sample. The result of the first regression clearly shows that whether the financial system is market-based or bank-based matters in explaining dividends payout, which is the main point of the paper. As the negative coefficient of the market dummy indicates, dividend payout ratios are lower in the market-based countries. A possible explanation could be less liquidity in the bank-based system and thereby the higher benefit of getting cash without selling the shares.

As investor protection is higher, the dividend payout becomes lower. The results are contradictory to LLSV (2000)'s finding such that as investor protection is higher, the dividend payout is higher. The results are consistent with the "substitution model" of LLSV (2000) where firms pay dividends to establish a reputation of treating investors well when investor protection is low to get funds from the market, or with the liquidity-based explanation of dividends (Banerjee et al. (2006)). The results are robust regardless of the regression models used, but the caveat is such that market-based countries and bank-based countries are both included in the sample. Since the market-based countries are the majority in the sample, the results are dominated by the market-based countries. Therefore, we need to perform the same analysis separately for both the bank and the market-based countries in order to understand dividend phenomena better.

The coefficients of trading are positive, and those of market capitalization are mixed. It is hard to explain because the results are the mixed ones as stated above. A better explanation can be provided if the dividend payout policies in two different financial systems are separately analyzed as in the following sections.

As expected, dividend tax advantage is positive and highly significant. The result confirms the traditional view that taxes affect dividend payments. When dividends are more favorably taxed than capital gains, other things being equal, firms pay higher dividends. The coefficients of leverage and sales growth are uniformly negative and highly significant across the regression models. Firms with higher leverage seem to pay lower dividends. The result is consistent with the pecking order theory of Myers and Majluf (1984) such that firms prefer internally generated funds such as retained earnings to externally generated funds such as debts such that they pay dividends from retained earnings rather than from borrowed money. The coefficients of sales growth confirm the traditional knowledge that growth firms pay smaller dividends.

To confirm the results of the first regression, it is important to include a financial system dummy variable in the analyses of dividends. The separate regressions of dividend payments are presented first for market-based countries and then for bank-based countries.

#### B. Market-based countries

The regression results only for the market-based countries are in Table IV. The market capitalization and trading turnover are uniformly positive and highly significant, and the investor protection is still negative and highly significant. It seems that as the capital markets are more developed and more active, firms pay more dividends to signal their value and to get funds from the capital market.

Again, it is interesting to see that contrary to LLSV (2000)'s results, as the investor protection is higher, firms pay less dividends. It seems that when investors are well protected, they do not care as much about getting cash from the firms. In other words, firms have less incentive to signal that they treat investors well by paying dividends when the investor protection is already high.

The dividend tax advantage is even more significant compared to the whole sample, that is, in the market-based countries, dividend tax advantage becomes a more important variable to explain dividend payouts. The coefficients of sales growth are less negative in all the regressions compared to the whole sample. In market-based countries, it seems that higher growth firms pay smaller dividends, but in smaller magnitude compared to the whole sample. Also, the coefficients of leverage are smaller in magnitude compared to the whole sample. It seems that firms in market-based countries pay dividends less from borrowed money compared to the whole sample.

In summary, the overall sample results are more applicable for the market-based countries.

#### C. Bank-based countries

The regression results only for the bank-based countries are in Table V. The results are quite striking. Now, the coefficients of market capitalization and trading turnover are negative and highly significant, but investor protection is positive which is exactly opposite to the cases in market-based countries. It is strange to see that in bank-based countries, as the market is bigger and more active, firms pay smaller dividends. According to the signaling theory, firms pay dividends to signal their value to get the right valuation from the market. They also signal their value to get external funds at a reasonable rate. It seems that the information asymmetry between managers and banks is less severe in bank-based countries because banks have better information about firms than average investors. As firms are bigger and have closer relationships with banks, the information asymmetry becomes smaller. Therefore, firms have less incentive to signal their value through dividends to get funds from banks, but they still have the incentive to signal their value to get a right valuation from the market. The need to get funds from banks seems greater than the need to signal their value to the market which explains the negative coefficients of the market capitalization. The negative coefficients of trading turnover can be explained by the liquidity-based theory.

The fact that the coefficients of investor protection are now positive and highly significant shows that in bank-based countries, as investor protection is higher, firms pay more dividends. The result is consistent with the “outcome model” of LLSV (2000) such that minority shareholders pressure more on firms to pay dividends as investor protection is higher and firms actually pay higher dividends.

The coefficients of dividend tax advantage are positive but smaller in magnitude compared to the cases in market-based countries. The coefficients of leverage are positive and larger in magnitude, and the coefficients of sales growth are negative and larger in magnitude compared to the results of the regressions in market-based countries. The results show that firms in bank-based countries pay dividends according to their financial situation and growth potential, that is, the firms with more debts pay less dividends and firms with higher growth pay less dividends compared to firms in market-based countries. As Dewenter and Warther (1998) and Aivazian, et al. (2003b) point out, in bank-based countries, banks know better about firms compared to investors in market-based countries.

The above results show that it is very important to separate firms in market-based and bank-based countries when dividend-related phenomena are analyzed. Previous results on international dividend study are often in conflict maybe due to mixing the dividend payout policies of two regimes.

The above results can be summarized as follows. In analyzing dividend payout pattern of the firms in different countries, the focus should be on the need and ability to raise capital and on receiving the right valuation. First, dividend payments depend on the need to raise the capital. In bank-based countries, since banks provide capital to firms and have extensive information about firms, firms have less incentive to signal their value to get capital. In market-based countries, on the other hand, firms raise capital mostly in the capital market, so they have more incentive to signal their value through dividends.

Another factor is the need to obtain a right valuation. Even in bank-based countries, while firms have less incentive to signal their value to banks, they still have a need to signal their value to the capital market to maximize their stock value and that explains why they pay dividends. Also, they pay dividends when they are forced by investors.

#### **IV. CONCLUSION**

This paper makes a distinction between dividend payout policies in market-based countries and those in bank-based countries. The regression results show that the effects of investor protection, market capitalization, and trading turnover on dividend payments are significantly different in both regimes. The magnitudes of the effects of other variables such as dividend tax advantage, leverage, and sales growth are also different. The above results show that the dividend phenomena are related to the financial system of the countries. Firms' need to get capital and how they obtain it cannot be separated from the analysis of dividends.

This paper contributed to the extant dividend literature by emphasizing the need to study dividend payout for different financial systems. By focusing on the difference of financial market structures as in Aivazian et al. (2003a, 2003b), this paper shows which phenomenon of dividends is common and which one is market specific. We can understand dividend payout policies better when we understand the financial market mechanism of each country and how those policies influence the valuation of firms in bank-based and market-based systems.

**Table I.**  
**Summary Statistics**

INVESTOR\_P is the principal component of the indices of private enforcement and the anti-director rights (LLS, 2006). DIV\_T is dividend tax advantage compared to capital gains tax from LLSV (2000). MKT is a dummy variable. MKT is one if a country has a market-based system and zero otherwise. LVRG (leverage) is the book value of short-term plus long-term debt divided by the book value of total assets. SALES\_G (sales growth) is three-year arithmetic average of growth rates in sales. DIV is cash dividends divided by cash flow. MKTCAP (market capitalization) is the size of the stock market. TRADING is trading turnover.

	<i>Variable</i>	<i>Number</i>	<i>Mean</i>	<i>Median</i>	<i>Minimum</i>	<i>Maximum</i>
The Whole Sample	INVESTOR_P	45560	6.93	6.86	0.10	10
	DIV_T	45514	0.72	0.70	0.40	1.08
	MKT	44533	0.61	1.00	0	1.00
	LVRG	45779	0.22	0.20	0	0.95
	SALES_G	45798	0.24	0.06	-0.86	3.00
	DIV	45798	0.13	0.08	0	1.00
	MKTCAP	45560	0.78	0.78	0.07	1.44
	TRADING	45560	0.49	0.40	0.01	1.47
Market Based Countries	INVESTOR_P	26982	8.10	8.55	1.05	10
	DIV_T	26982	0.72	0.67	0.40	1.05
	LVRG	26971	0.21	0.18	0	0.95
	SALES_G	26982	0.26	0.07	-0.86	3.00
	DIV	26982	0.12	0.04	0	1.00
	MKTCAP	26982	0.98	1.18	0.07	1.44
	TRADING	26982	0.64	0.70	0.01	1.01
	Bank Based Countries	INVESTOR_P	17551	5.22	6.86	0.10
DIV_T		17510	0.73	0.70	0.58	1.08
LVRG		17543	0.23	0.21	0	0.95
SALES_G		17551	0.21	0.05	-0.72	3.00
DIV		17551	0.14	0.11	0	1.00
MKTCAP		17551	0.46	0.59	0.11	0.93
TRADING		17551	0.20	0.24	0.12	0.24

**Table II.**  
**Correlation Coefficients\***

INVESTOR\_P is the principal component of the indices of private enforcement and the anti-director rights (LLS, 2006). DIV\_T is dividend tax advantage compared to capital gains tax from LLSV (2000). MKT is a dummy variable. MKT is one if a country has a market-based system and zero otherwise. LVRG (leverage) is the book value of short-term plus long-term debt divided by the book value of total assets. SALES\_G (sales growth) is three-year arithmetic average of growth rates in sales. DIV is cash dividends divided by cash flow. MKTCAP (market capitalization) is the size of the stock market. TRADING is trading turnover.

	DIV_T	MKT	LVRG	SALES_G	DIV	MKTCAP	TRADING
INVESTOR_P	-0.380	0.506	-0.052	0.019	-0.129	0.718	0.465
DIV_T		-0.039	-0.014	-0.015	0.242	-0.287	-0.251
MKT			-0.075	0.038	-0.068	0.661	0.759
LVRG				0.036	-0.105	-0.106	-0.079
SALES_G					-0.045	0.031	0.037
DIV						-0.085	-0.047
MKTCAP							0.781

\* All the coefficients are significantly different from zero at the 1 percent level.

**Table III.**  
**Regression Results for the Whole Sample**

$$DIV_t = \alpha + \beta_1 MKT_t + \beta_2 DIV\_T_t + \beta_3 LVRG_t + \beta_4 SALES\_G_t + \varepsilon_t \quad (1)$$

$$DIV_t = \alpha + \beta_1 MKTCAP_t + \beta_2 DIV\_T_t + \beta_3 LVRG_t + \beta_4 SALES\_G_t + \varepsilon_t \quad (2)$$

$$DIV_t = \alpha + \beta_1 TRADING_t + \beta_2 DIV\_T_t + \beta_3 LVRG_t + \beta_4 SALES\_G_t + \varepsilon_t \quad (3)$$

$$DIV_t = \alpha + \beta_1 INVESTOR\_P_t + \beta_2 DIV\_T_t + \beta_3 LVRG_t + \beta_4 SALES\_G_t + \varepsilon_t \quad (4)$$

$$DIV_t = \alpha + \beta_1 INVESTOR\_P_t + \beta_2 MKTCAP_t + \beta_3 DIV\_T_t + \beta_4 LVRG_t + \beta_5 SALES\_G_t + \varepsilon_t \quad (5)$$

$$DIV_t = \alpha + \beta_1 INVESTOR\_P_t + \beta_2 TRADING_t + \beta_3 DIV\_T_t + \beta_4 LVRG_t + \beta_5 SALES\_G_t + \varepsilon_t \quad (6)$$

$DIV_t$  is cash dividends divided by cash flow in year  $t$ ,  $MKT_t$  is a dummy variable which is one if a country has a market-based system,  $MKTCAP_t$  is the market capitalization,  $TRADING_t$  is trading turnover,  $INVESTOR\_P_t$  is the investor protection,  $DIV\_T_t$  is the dividend tax advantage,  $LVRG_t$  is the leverage ratio,  $SALES\_G_t$  is the three-year arithmetic average of the growth rates in sales, and  $\varepsilon_{it}$  is an error term.

Model	1	2	3	4	5	6
Constant	-0.026*	-0.024*	-0.044	-0.006	-0.006	-0.011***
MKT	-0.021*					
MKTCAP		-0.012*			0.003	
TRADING			0.004**			0.016*
INVESTOR_P				-0.003*	-0.003*	-0.004*
DIV_T	0.261*	0.254*	0.265*	0.242*	0.243*	0.246*
LVRG	-0.092*	-0.092*	-0.089*	-0.092*	-0.092*	-0.090*
SALES_G	-0.009*	-0.010*	-0.010*	-0.010*	-0.010*	-0.010*
N	44472	45494	45495	45494	45494	45494
Adjusted R <sup>2</sup>	0.0752	0.0711	0.0705	0.0724	0.0724	0.0732
Pr>F	<.001	<.001	<.001	<.001	<.001	<.001

\* Coefficients are significantly different from zero at the 1 percent level.

\*\* Coefficients are significantly different from zero at the 5 percent level.

\*\*\* Coefficients are significantly different from zero at the 10 percent level.

**Table IV.**  
**Regression Results for the Market-based Country**

$$DIV_t = \alpha + \beta_1 MKTCAP_t + \beta_2 DIV\_T_t + \beta_3 LVRG_t + \beta_4 SALES\_G_t + \varepsilon_t \quad (1)$$

$$DIV_t = \alpha + \beta_1 TRADING_t + \beta_2 DIV\_T_t + \beta_3 LVRG_t + \beta_4 SALES\_G_t + \varepsilon_t \quad (2)$$

$$DIV_t = \alpha + \beta_1 INVESTOR\_P_t + \beta_2 DIV\_T_t + \beta_3 LVRG_t + \beta_4 SALES\_G_t + \varepsilon_t \quad (3)$$

$$DIV_t = \alpha + \beta_1 INVESTOR\_P_t + \beta_2 MKTCAP_t + \beta_3 DIV\_T_t + \beta_4 LVRG_t + \beta_5 SALES\_G_t + \varepsilon_t \quad (4)$$

$$DIV_t = \alpha + \beta_1 INVESTOR\_P_t + \beta_2 TRADING_t + \beta_3 DIV\_T_t + \beta_4 LVRG_t + \beta_5 SALES\_G_t + \varepsilon_t \quad (5)$$

$DIV_t$  is cash dividends divided by cash flow in year  $t$ ,  $MKTCAP_t$  is the market capitalization,  $TRADING_t$  is trading turnover,  $INVESTOR\_P_t$  is the investor protection,  $DIV\_T_t$  is the dividend tax advantage,  $LVRG_t$  is the leverage ratio,  $SALES\_G_t$  is the three-year arithmetic average of the growth rates in sales, and  $\varepsilon_{it}$  is an error term.

Model	1	2	3	4	5
Constant	-0.147*	-0.200*	-0.023*	-0.066*	-0.102*
MKTCAP	0.034*			0.087*	
TRADING		0.108*			0.137*
INVESTOR_P			-0.005*	-0.013*	-0.010*
DIV_T	0.342*	0.364*	0.280*	0.305*	0.315*
LVRG	-0.055*	-0.052*	-0.070*	-0.060*	-0.061*
SALES_G	-0.006*	-0.005*	-0.005*	-0.004*	-0.004*
N	26970	26970	26970	26970	26970
Adjusted R <sup>2</sup>	0.1045	0.1205	0.1050	0.1214	0.1340
Pr>F	<.001	<.001	<.001	<.001	<.001

\* Coefficients are significantly different from zero at the 1 percent level.

**Table V.**  
**Regression Results for the Bank-Based Country**

$$DIV_t = \alpha + \beta_1 MKTCAP_t + \beta_2 DIV\_T_t + \beta_3 LVRG_t + \beta_4 SALES\_G_t + \varepsilon_t \quad (1)$$

$$DIV_t = \alpha + \beta_1 TRADING_t + \beta_2 DIV\_T_t + \beta_3 LVRG_t + \beta_4 SALES\_G_t + \varepsilon_t \quad (2)$$

$$DIV_t = \alpha + \beta_1 INVESTOR\_P_t + \beta_2 DIV\_T_t + \beta_3 LVRG_t + \beta_4 SALES\_G_t + \varepsilon_t \quad (3)$$

$$DIV_t = \alpha + \beta_1 INVESTOR\_P_t + \beta_2 MKTCAP_t + \beta_3 DIV\_T_t + \beta_4 LVRG_t + \beta_5 SALES\_G_t + \varepsilon_t \quad (4)$$

$$DIV_t = \alpha + \beta_1 INVESTOR\_P_t + \beta_2 TRADING_t + \beta_3 DIV\_T_t + \beta_4 LVRG_t + \beta_5 SALES\_G_t + \varepsilon_t \quad (5)$$

$DIV_t$  is cash dividends divided by cash flow in year  $t$ ,  $MKTCAP_t$  is the market capitalization,  $TRADING_t$  is trading turnover,  $INVESTOR\_P_t$  is the investor protection,  $DIV\_T_t$  is the dividend tax advantage,  $LVRG_t$  is the leverage ratio,  $SALES\_G_t$  is the three-year arithmetic average of the growth rates in sales, and  $\varepsilon_{it}$  is an error term.

Model	1	2	3	4	5
Constant	0.123*	0.159*	0.062*	0.066*	0.110*
MKTCAP	-0.022*			-0.062*	
TRADING		-0.192*			-0.194*
INVESTOR_P			0.004*	0.007*	0.004*
DIV_T	0.087*	0.077*	0.129*	0.145*	0.118*
LVRG	-0.135*	-0.139*	-0.139*	-0.143*	-0.144*
SALES_G	-0.016*	-0.016*	-0.015*	-0.015*	-0.015*
N	17501	17501	17501	17501	17501
Adjusted R <sup>2</sup>	0.0382	0.0461	0.0413	0.0459	0.0501
Pr>F	<.001	<.001	<.001	<.001	<.001

\* Coefficients are significantly different from zero at the 1 percent level.

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