DIVIDEND PAYOUTS OF COMMERCIAL BANKS

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ABSTRACT

In this paper, we examine relations between a bank's dividend payouts and stock and option holdings of the top five executives. We find a negative relation between dividend payouts and stock option holdings although the relation becomes significantly weaker after the enactment of Gramm-Leach-Bliley in 1999 and the dividend tax cut in 2003. We also find that dividend payouts are negatively related to managerial stock holdings prior to the dividend tax cut but this relation becomes significantly positive in the post dividend tax cut regime. This is consistent with firms increasing dividend payments for firms with executives with large stock holding in the post tax cut regime.

INTRODUCTION

Dividend policy of firms has garnered a substantial amount of research attention over the last several decades. Recently, Fama and French (2001) document that the number of US listed firms paying cash dividends has declined dramatically since 1978. DeAngelo, DeAngelo, and Skinner (2004) document that the decline in the number of dividend payers is confined to industrial firms and is not realized by financial/utility firms. They find that the number of payers for financial/utility (industrial) firms increases (declines) by 9.5% (58.9%) from 1978 to 2000. Although, they also note that the proportion of financial/utility dividend payers on CRSP declined by 8.3% over the same time period. For example, based on the Compustat database in 2005, the banking industry accounts for 11.20% of the total market capitalization of all the dividend-paying firms and the dividends paid account for 14.64% of the total dividends paid by all the public firms in that year. More specifically, publicly traded banks (two-digit SIC code 60) paid dividends of $75.53 billion, which is higher than any other industries classified by the first two-digit SIC code. Yet, even though financial institutions account for a substantial portion of total dividends paid by public firms, much of the previous research excludes financial institutions (a notable exception is Cloyd, Robinson & Weaver, 2005). Financial institutions are often excluded because of their unique financial structure (high debt-to-equity ratios) and their regulatory environment. In addition, some previous research suggests that bank dividend policy is different from other industries (Dickens, Casey & Newman, 2002).

The composition of executives' stock and option holdings has been shown to be an important determinant of payout policy for industrial firms (Brown, Liang & Weisbenner, 2007). Managerial ownership as an incentive mechanism to reduce agency problems may mitigate free cash flow problems, thus result in higher payouts (Fenn & Liang, 2001). Because dividends also provide executives with liquidity and aid in diversification, higher stock ownership may be associated with higher dividends. On the other hand, managerial ownership may be a substitute for dividends to address agency problems (Agrawal & Jayaraman, 1994). Thus, the relation between stock ownership and dividend policy is an empirical question. Given most executive

options are not dividend protected (Murphy, 1999) and option values decline when dividends are paid, a negative association between stock option ownership and dividends is expected. We examine these relations between managerial stock/stock option holdings and dividend payouts in financial institutions as well and expect that they may be influenced by the bank regulatory environment.

We analyze dividend policy for banks during deregulation in the 1990s and early 2000s and consider the impact of managerial stock and stock option holdings. We examine stock holdings and options held by the top five executives. We gather data from 1992 to 2007. We begin with 1992 to obtain lagged data since we utilize the ExecuComp database for executive compensation data which begins in 1993. We define two dates associated with deregulation: in 1996, the Economic Growth and Regulatory Paperwork Reduction Act improved the flow of credit to businesses and consumers and streamlined the mortgage lending process. In 1999, Gramm, Leach, Bliley Act removed many of the barriers which restricted the integration of commercial banking, insurance and investment banking. Another exogenous change in the business environment we study in the paper is the 2003 dividend tax. The deregulation provided bank managers more growth opportunities, competition and markets for corporate control. We expect the relations between managerial ownership and dividend policy for financial institutions to become stronger with the progress of deregulation.

The Jobs and Growth Tax Relief Reconciliation Act of 2003 that decreased the individual tax rate on dividends from 38.6 percent to the top rate of 15 percent has been shown to induce many firms to initiate dividends or increase dividends (Auerbach & Hassett, 2006). Analyzing firm responses to the 2003 dividend tax cut, Brown, Liang and Weisbenner (2007) find a significantly greater likelihood of a dividend increase following the dividend tax cut for executives with greater stock ownership. This relation does not exist, however, in the decade prior to the tax change. Executives with large stock option holdings were less likely to increase dividends both before and after the dividend tax cut. We extend this line of study to consider the impact of the dividend tax code change in May 2003 on the dividend policy of financial institutions. We have a longer post-tax cut period than that of Brown, Liang and Weisbenner (2007) to better explore the effect of the tax cut on dividend policy.

This paper is organized as follows: we first describe the related literature regarding dividend policy and managerial ownership and develop our research questions. We next describe our data and empirical methodology. Lastly, we present our empirical results and conclude the study.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Why does a firm pay dividends? Miller and Modigliani (1961) propose the tax clientele theory that a firm establishes its dividend policy to attract clienteles formed based on investors' tax brackets. Secondly, signaling theory (Bhattacharya, 1979; John & Williams, 1985; Miller & Rock, 1985) suggests firms use dividends to signal their private information to investors. The free cash flow hypothesis as developed by Easterbrook (1984) and Jensen (1986) suggests that dividend payments can be used to reduce cash available for managers to invest in negative net present value projects, in other words, to reduce the overinvestment problem. Smith and Watts (1992) and Gaver and Gaver (1993) find firms with potentially the greatest agency costs have high dividend payouts. More recently, Baker and Wurgler (2004) propose a catering theory of dividends that managers cater to investors by paying dividends when investors put a stock price

premium on payers. DeAngelo, DeAngelo and Stulz (2006) show that dividend payouts are related to firms' retained earnings, supporting a life cycle theory of dividends.

Managerial ownership as an incentive mechanism helps to align the interests of managers and those of shareholders, which may mitigate the free cash flow problems. Thus managerial ownership and dividend payouts may serve as substitutes or complements with regards to the free cash flow problem. Fenn and Liang (2001) find a positive relation between managerial stock ownership and payouts in firms with the most serious excess cash flow problems but no relation at other firms. Alternatively, Agrawal and Jayaraman (1994) finds that dividend payouts are negatively related to managerial stock holdings. Dividends also provide liquidity for managers because managers face restrictions on when they can sell stock and also may face mandatory stock ownership requirements (Core & Guay, 1999; Core & Larcker, 2002). In addition, dividends aid in diversification for managers who have undiversified wealth in the firm. Therefore, managers with large stock ownership may prefer dividend payouts. The study of White (1996) suggests that managerial stock ownership encourages dividend payments.

Stock options are not dividend protected (Murphy, 1999) and thus produce a disincentive for managers to pay dividends. Given that the value of the option will fall when stocks begin to trade ex-dividend, managers with a large portfolio of unexercised options would have a financial incentive to keep dividends low. A negative relation between dividends and management stock options has been found in several studies (Cuny, Martin & Puthenpurackal, 2009; Fenn & Liang, 2001; Lambert, Lanen & Larcker, 1989;). Also a number of studies (Bartov, Krinsky & Lee, 1998; Jolls, 1996; Kahle, 2002; Weisbenner, 1998) associate the increased use of stock repurchases rather than dividends to distribute cash to investors with the increased use of stock options by firms.

The existence of deposit insurance and the high leverage (high debt-to-equity ratio) for financial institutions may lead to greater agency problems. Therefore, managerial incentives for the executives of financial institutions may become more important in corporate dividend policy than for the counterparts in industrial firms. The free cash flow hypothesis or the personal incentive effect of managerial stocks predicts a positive relation between dividend payouts and managerial stock holdings. Alternatively, the substitution of dividend payouts with managerial ownership to reduce agency problems predicts a negative relation between dividend payouts and managerial stock holdings.

H1 *The dividend payouts are unrelated to managerial stock holdings for financial institutions*.

Stock options are expected to be negatively related to dividend payments considering the personal financial incentive perspective of managers or based on the free cash flow hypothesis.

H2 *Dividend payouts are negatively related to managerial stock option holdings for financial institutions.*

In addition, we examine the relation between managerial ownership and dividend policy subject to exogenous variation. Investigating the effect of exogenous events on the relation between managerial ownership and dividend payouts provide additional insights on the dynamics of how the relation is altered to react to a changing business environment. As noted by Becher, Campbell and Frye (2005), in the 1990s, the regulatory environment changed dramatically for financial institutions. They outline the dramatic changes associated with deregulation, changing technology and the rapid consolidation in the industry. There are three major changes in

regulation during our sample period. In 1994, the Riegle-Neal Interstate Banking and Branching Efficiency Act allowed interstate banking and branching increasing the opportunities for financial institutions to grow across state lines through branching and acquisitions. Despite this change, our sample begins in 1993 (due to Execucomp constraints) which does not allow us to isolate this regulatory change. In 1996, the Economic Growth and Regulatory Paperwork Reduction Act improved the flow of credit to businesses and consumers and streamlined the mortgage lending process expanding the lending opportunities for financial institutions. In 1999, the Gramm, Leach, Bliley Act removed many of the barriers which restricted the integration of commercial banking, insurance and investment banking thus increasing financial institutions' growth opportunities. The deregulation provides bank managers with expanded opportunities, increased competition and an expanding market for corporate control. Becher, Campbell and Frye (2005) find evidence that suggests that deregulation is associated with banks adopting more equity based compensation for directors and thus improving internal monitoring. Crawford, Ezzell and Miles (1995) find deregulation increases bank CEO pay-performance sensitivities. Similarly, Hubbard and Palia (1995) find stronger pay-performance sensitivity after deregulation that permitted changes in interstate banking. Hence we expect deregulation may have an impact on the relation between managerial stock and option ownership and dividend payouts.

H3 *The relation between managerial stock holdings and dividends for financial institutions becomes stronger with deregulations.*

H4 *The relation between managerial stock option holdings and dividends for financial institutions becomes stronger with deregulations.*

The 2003 dividend tax cut that makes dividends more attractive to individual investors may affect firms' dividend payouts. Several studies (Auerbach & Hassett, 2006; Zhang, Farrell & Brown, 2008) find firms initiated or increased dividends in response to the dividend tax cut. Analyzing the impact of the dividend tax cut of 2003, Blouin, Raedy, and Shakelford (2004), Nam, Wang, and Zhang (2010) and Chetty and Saez (2005) also find dividend increases after the tax cut are positively related to managerial stock ownership. Brown, Liang and Weisbenner (2007) find a significantly greater likelihood of a dividend increase following the dividend tax cut for executives with greater stock ownership. This relation does not exist, however, in the decade prior to the tax change. Executives with large stock option holdings were less likely to increase dividends both before and after the dividend tax cut. However, these studies do not separately examine financial institutions. An exception is a recent working paper by Cloyd, Robinson and Weaver (2005) who examine the response of private and public bank holding companies to the 2003 dividend tax cut. They find that dividend yield increases for both private and public bank holding companies after the tax cut. Since options are not dividend-protected, their effect on dividends should not vary with a change in dividend tax rates.

H5 *The relation between managerial stock holdings and dividends for financial institutions strengthens after the 2003 dividend tax cut.*

H6 *The relation between managerial stock option holdings and dividends for financial institutions are unrelated to the 2003 dividend tax cut.*

DATA AND METHODOLOGY

We examine the number of shares and options held by the top five executives in commercial bank holding companies. To identify the sample, we begin with Bank Compustat and identify all firms within the SIC codes between 6000 and 6099 (depository institutions) during 1992-2007. Our initial screen results in a sample of 11,560 firm-year observations. Bank Compustat is the source for firms' financial information. To gather stock and option data, we match the Bank Compustat sample to Execucomp, and the sample size decreases to 1,465 firm-year observations, representing 192 unique financial institutions. We do not require firms to have all the dependent and explanatory variables. Hence, the number of observations varies across regressions.

Table 1 reports the descriptive statistics for the stock and option ownership variables. The average percentage share ownership of the top five executives is 2.48%. Based on a sample of bank CEOs during a comparable sample period, Belkhir and Chazi (2010) document that the average bank CEO holds 2.99% of outstanding stock. The percentage of options held by the top five executives is 1.77%.

To investigate the relation between the propensity to pay dividends and management option holdings and stock ownership during deregulation and the 2003 dividend tax cut period, we use the fixed-effect Tobit model following Cuny, Martin and Puthenpurackal (2009). Including a firm specific fixed effect alleviates the endogeneity problems caused by omitted firm specific variables, such as management capability or corporate governance which will affect both dividend payouts and managerial compensation. Since dividend payouts are left centered at zero, the Tobit model is the appropriate estimation method.

$$\begin{aligned} DIV\_YLD_{i,t} = {} & \alpha_0 + \alpha_1 O_{i,t-1}(S_{i,t-1}) + \alpha_2 SIZE_{i,t-1} + \alpha_3 ROA_{i,t-1} + \alpha_4 MTB_{i,t-1} \\ & + \alpha_5 RETTA_{i,t-1} + \alpha_6 TIER1\_CAP_{i,t-1} + \alpha_7 NIM_{i,t-1} + \alpha_8 D_1 \times O_{i,t-1}(S_{i,t-1}) \\ & + \alpha_9 D_2 \times O_{i,t-1}(S_{i,t-1}) + \alpha_{10} D_3 \times O_{i,t-1}(S_{i,t-1}) + \varepsilon_{i,t} \end{aligned}$$

Where DIV_YLD_t is dividend yield and is defined as ordinary common dividends divided by the market value of common shares. The average dividend yield in our sample is 2.45% as shown in Table 1. Aboody and Kasznik (2008) show a dividend yield of 1.69% in 2002 and 2.56% in 2003 for a sample that includes both financial and industrial firms. O_{t-1} is the percentage of executive option ownership and is defined as the number of options held by top five executives deflated by total shares outstanding at the beginning of the year. S_{t-1} is the percentage of executive stock ownership and is defined as the number of shares held by top five executives deflated by total share outstanding at the beginning of the year. Following prior studies (Brown, Liang & Weisbenner, 2007; Cloyd, Robinson & Weaver, 2005; DeAngelo, DeAngelo & Stulz, 2006; Fenn & Liang, 2001), we also control for firm size, market to book ratio, profitability, retained earnings, capital risk, and operating efficiency. These control variables are all measured at the beginning of the year. $SIZE_{t-1}$ controls for firm size and is defined as the logarithm of the total assets. ROA_{t-1} is return on assets, a profitability measure, and is defined as net income deflated by the total assets. MTB_{t-1} is the market to book ratio and is defined as the market value of total assets deflated by the book value of total assets. $RETTA_{t-1}$ is defined as retained earnings deflated by total assets at the beginning of the year. $TIER1\_CAP_{t-1}$ is the risk-adjusted tier 1 capital ratio, a capital risk measure, and is defined as the tier 1 capital of a

bank deflated by net risk-weighted assets. NIM_{t-1} is an operating efficiency measure and is defined as the difference between interest income and interest expense deflated by total assets. To test the impact of deregulation and the 2003 dividend tax cut on financial institutions' dividend payout, we also include three year dummy variables. D_1 is a year dummy that equals one for years 1996 – 1998; 0 otherwise. D_2 is a year dummy that equals one for years 1999 – 2002; 0 otherwise. D_3 is a year dummy that equals one for years 2003 – 2007; 0 otherwise.

Table 1

This table reports the key statistics of the dependent and independent variables during 1993-2007. Since we do not require financial institutions to have all dependent and independent variables, the number of observations are different based on model specifications. DIV_YLD_t is dividend yield and is defined as common dividends (ordinary) divided by the market value of common shares. All remaining variables are measured at the beginning of the year (t-1). O_{t-1} is defined as the number of options held by top five executives deflated by total shares outstanding. S_{t-1} is defined as the number of shares held by top five executives deflated by total share outstanding at the beginning of the year. $SIZE_{t-1}$ is defined as the logarithm of the total assets. ROA_{t-1} is defined as net income deflated by the total assets. MTB_{t-1} is defined as the market value of total assets deflated by the book value of total assets. $RETTA_{t-1}$ is defined as retained earnings deflated by total assets. $TIER1\_CAP_{t-1}$ is defined as the tier 1 capital of a financial institution deflated by net risk-weighted assets. NIM_{t-1} is defined as the difference between interest income and interest expense deflated by total assets.

Variables Summary Statistics

Variables	N	Mean	Median	STD	Min	25%	75%	Max
DIV_YLD_t	1,455	0.0245	0.0240	0.0144	0.0000	0.0153	0.0326	0.1925
S_{t-1}	1,167	0.0248	0.0086	0.0481	0.0000	0.0033	0.0234	0.3767
O_{t-1}	1,231	0.0177	0.0113	0.0206	0.0000	0.0064	0.0221	0.3086
$SIZE_{t-1}$	1,349	9.4594	9.2550	1.4256	5.0521	8.4421	10.4466	14.1938
ROA_{t-1}	1,349	0.0118	0.0118	0.0050	-0.0298	0.0096	0.0142	0.0396
MTB_{t-1}	1,268	1.1033	1.0842	0.0887	0.8955	1.0439	1.1395	1.6421
$RETTA_{t-1}$	1,348	0.0521	0.0504	0.0277	-0.0285	0.0338	0.0656	0.2214
$TIER1\_CAP_{t-1}$	1,349	0.1008	0.0960	0.0315	0.0429	0.0805	0.1152	0.3760
NIM_{t-1}	1,348	0.0337	0.0346	0.0082	0.0049	0.0289	0.0394	0.0648

RESULTS

The Tobit regression results are reported in Table 2. The first two columns of Table 2 report results where we analyze the relation between dividend yield and option ownership over the entire sample period (model 1) and then allowing for the effect of the changing regulatory environment (model 2). We document a negative and significant relation between the percentage option ownership of the top five executives and dividend yield as predicted by hypothesis 2. We also note that the relation becomes less negative during 1999-2002 and during 2003-2007. It appears that the change in the dividend tax law has a significant impact on a firm's willingness to pay dividends even if the executives own a large percentage of stock options.

Columns three (model 3) and four (model 4) of Table 2 report regression results where we analyze the relation between dividend yield and stock ownership over the entire period and during the changing regulatory environment, respectively. Over the entire sample period, we find a negative relation between executive stock ownership and dividend yield. This negative relation, however, becomes insignificant when we control for the changing regulatory environment. In

fact, we find a positive and significant relation between percentage share ownership and dividend yield after the 2003 dividend tax cut.

Table 2

The following regressions are estimated for the period over 1993-2007. The dependent variable is DIV_YLD_t and is defined as common dividends (ordinary) divided by the market value of common shares. The subscript (t-1) depicts variables measured at the beginning of the year. O_{t-1} is defined as the number of options held by top five executives deflated by total shares outstanding. S_{t-1} is defined as the number of shares held by top five executives deflated by total share outstanding. $SIZE_{t-1}$ is defined as the logarithm of the total assets. ROA_{t-1} is defined as net income deflated by the total assets. MTB_{t-1} is defined as the market value of total assets deflated by the book value of total assets. $RETTA_{t-1}$ is defined as retained earnings deflated by total assets. $TIER1\_CAP_{t-1}$ is defined as the tier 1 capital of a financial institution deflated by net risk-weighted assets. NIM_{t-1} is defined as the difference between interest income and interest expense deflated by total assets. D_1 is a year dummy that equals 1 for years 1996 – 1998; 0 otherwise. D_2 is a year dummy that equals 1 for years 1999 – 2002; 0 otherwise. D_3 is a year dummy that equals 1 for years 2003 – 2007; 0 otherwise. *t*-values are reported in parenthesis. ***, **, *, indicate statistical significance at 1%, 5%, and 10% levels, respectively.

Tobit Regression Results

Variable	Dependent Variable (DIV_YLD_t)			
	Option Ownership		*Stock Ownership*	
	(Model1)	(Model 2)	(Model 3)	(Model 4)
Intercept	0.0242***	0.0282***	0.0231***	0.0216***
	(3.42)	(3.88)	(3.18)	(3.04)
O_{t-1}	0.0518**	-0.1494**		
	(-2.49)	(-2.42)		
S_{t-1}			-0.0192**	-0.0451
			(-2.20)	(-1.62)
$SIZE_{t-1}$	0.0036***	0.0033***	0.0037***	0.0037***
	(10.31)	(9.66)	(10.94)	(11.12)
ROA_{t-1}	0.5949***	0.5717***	0.5742***	0.5767***
	(5.50)	(5.30)	(4.97)	(5.11)
MTB_{t-1}	0.0444***	-0.0460***	-0.0458***	-0.0445***
	(-8.45)	(-8.47)	(-8.37)	(-8.23)
$RETTA_{t-1}$	0.0011	0.0013	0.0102	-0.0014
	(0.07)	(0.084)	(0.62)	(-0.09)
$TIER1\_CAPt_{-1}$	0.0210	0.0206	0.0145	0.0206
	(1.36)	(1.35)	(0.94)	(1.36)
NIM_{t-1}	0.2208***	0.2354***	0.2420***	0.2531***
	(4.03)	(4.32)	(4.38)	(4.67)
$D_1 \times O_{t-1}$ *or* $D_1 \times S_{t-1}$		-0.0466		-0.0365
		(-0.70)		(-1.17)
$D_2 \times O_{t-1}$ *or* $D_2 \times S_{t-1}$		0.1120*		-0.0021
		(1.79)		(-0.07)
$D_3 \times O_{t-1}$ *or* $D_3 \times S_{t-1}$		0.1273**		0.1000***
		(2.04)		(3.35)
N	1,226	1,226	1,162	1,162
Log Likelihood	3,364	3,374	3,175	3,202

Specifying a model where we include both share and option ownership variables (as shown in Table 3), we find that the negative relation between option holdings and dividend yield persists but managerial ownership becomes insignificant. However, once we include the dummy variables for the different regulatory periods we find that the negative relation between options and dividend yield appears to be concentrated in the 1996-1998 period and then the positive relation between share ownership and dividend yield becomes significant in the post dividend tax cut regime (between 2003-2007).

Table 3

The following regressions are estimated for the period over 1993-2007 with both option and share ownership variables in the model specification. All the variables have the same definition as Table 2. *t*-values are reported in parenthesis. ***, **, *, indicate statistical significance at 1%, 5%, and 10% levels, respectively.

Tobit Regression Results

Variable	Dependent Variable (DIV_YLD_t)	
	Model 1	Model 2
Intercept	0.0274***	0.0283***
	(3.71)	(3.80)
O_{t-1}	-0.0615**	-0.1077
	(-2.56)	(-1.50)
S_{t-1}	-0.0084	-0.0322
	(-0.88)	(-1.02)
$SIZE_{t-1}$	0.0035***	0.0034***
	(9.65)	(9.64)
ROA_{t-1}	0.5767***	0.5743***
	(4.99)	(5.07)
MTB_{t-1}	-0.0456***	-0.0460***
	(-8.35)	(-8.34)
$RETTA_{t-1}$	0.0054	-0.0030
	(0.33)	(-0.19)
$TIER1\_CAPt_{-1}$	0.0163	0.0214
	(1.02)	(1.38)
NIM_{t-1}	0.2098***	0.2195***
	(3.74)	(4.02)
$D_1 \times O_{t-1}$		-0.1014
		(-1.20)
$D_2 \times O_{t-1}$		0.1617**
		(2.10)
$D_3 \times O_{t-1}$		0.0226
		(0.30)
$D_1 \times S_{t-1}$		-0.0036
		(-0.10)
$D_2 \times S_{t-1}$		-0.0421
		(-1.17)
$D_3 \times S_{t-1}$		0.0995***
		(2.87)
N	1,158	1,158
Log Likelihood	3,171	3,208

Our results thus far suggest that during the period prior to the dividend tax cut, as deregulation took place and firms awarded more options, options induced managers to constrain dividend yields. However, the dividend tax cut made dividends much more attractive to

managers with high stock ownership causing options to become less relevant in determining dividend policy.

CONCLUSIONS

Given that financial institutions are major dividend payers but often excluded in existing studies on dividend policy and they differ from other industries in many aspects, we focus on the dividend policy of this unique industry to fill the gap in the dividend literature. Specifically, we focus on the impact of deregulation and the 2003 dividend tax cut on the relations between a bank's dividend payouts and stock and option holdings of the top five executives during the sample period 1993-2007. We find a negative relation between dividend payouts and stock option holdings although the relation becomes significantly weaker after the enactment of Gramm-Leach-Bliley in 1999 and the dividend tax cut in 2003. We also find that dividend payouts are negatively related to managerial stock holdings prior to controlling for deregulation and the dividend tax cut. The relation becomes significantly positive in the post dividend tax cut regime. This is consistent with firms increasing dividend payments for firms with executives with large stock holding in the post tax cut regime.

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