



2009

Bank Ownership and Management Structure Affects on Principal-Agent Costs and Returning Capital

Joel Wicks, '09
Illinois Wesleyan University

Follow this and additional works at: https://digitalcommons.iwu.edu/busadmin_honproj



Part of the [Business Commons](#)

Recommended Citation

Wicks, '09, Joel, "Bank Ownership and Management Structure Affects on Principal-Agent Costs and Returning Capital" (2009). *Honors Projects*. 22.
https://digitalcommons.iwu.edu/busadmin_honproj/22

This Article is protected by copyright and/or related rights. It has been brought to you by Digital Commons @ IWU with permission from the rights-holder(s). You are free to use this material in any way that is permitted by the copyright and related rights legislation that applies to your use. For other uses you need to obtain permission from the rights-holder(s) directly, unless additional rights are indicated by a Creative Commons license in the record and/ or on the work itself. This material has been accepted for inclusion by faculty at Illinois Wesleyan University. For more information, please contact digitalcommons@iwu.edu.

©Copyright is owned by the author of this document.

**Bank Ownership and Management Structure
Affects on Principal-Agent Costs and
Returning Capital**

Joel Wicks, Illinois Wesleyan University

Abstract

This paper attempts to add to existing research on corporate payout by focusing on the role that the principal-agent problem plays on dividend policies of public and private banks. The results indicate that private banks are better able to monitor managers use of excessive free cash flow and retaining earnings and will be more willing to let retained earnings build up without returning them to owners in the form of dividends or stock repurchases.

1. Introduction

There have been many studies addressing the topic of companies return of capital to owners, and there are many competing and complementary theories on this subject¹. This paper focuses on the residual dividend theory that suggests that companies should retain and reinvest earnings as long as returns on investments exceed the returns stockholders could obtain on other investments. This paper attempts to add to corporate payout research by focusing on the role that the principal-agent problem, which is inherent between managers and owners, plays on corporate payout policies when looked at through the residual dividend theory. While owners desire to have the greatest return on their contributed capital, managers often have incentive to grow the firm for the sake of growth. Famous investor Warren Buffet believes that owners desire the highest rate of return on their capital, so management should return it to owners if managers are unable to generate a higher rate of return than owners could obtain if the owners invested the extra capital elsewhere (Hagstrom, 2004). However, managers have incentives to cause firms to grow beyond optimal size. First of all, managers desire growth because it increases their power and the amount of resources they control, which is associated with higher compensation. Also, growth allows managers an easier way to retain and keep employees happy by creating a reward system that allows for more promotions because of the increased supply of positions due to the company's growth (Jensen, 1986).

The problem is very clear with the hypothetical balance sheets of companies had they chosen not to pay dividends. According to DeAngelo (2004):

¹ See Allen and Michaely (2002) for an extensive review of the prior research

“had the 25 largest long-standing dividend –paying industrial firms in 2002 not paid dividends, they would have cash holdings of \$1.8 trillion (51% of total assets), up from \$160 billion (6% of assets), and \$1.2 trillion in excess of their collective \$600 billion in long term debt. Absent dividends, these firms would have huge cash balances and little to no leverage.”

All of this excess cash would be available for investment into projects and acquisitions with no additional investment opportunities. Warren Buffet believes that “just as work expands to fill available time, corporate projects or acquisitions will materialize to soak up available funds.” (Hagstrom, 2004). As a result of this excess cash managers likely would have invested in less profitable opportunities resulting in a decrease in return on equity. Therefore, in order to minimize the principal-agent problems with managers, owners usually demand for capital to be returned when they see a buildup in cash from retained earnings (DeAngelo, 2004).

In order to test the principal-agent problem, this paper will focus on the banking sector because both private and public banks have to file publicly viewable call reports with the Federal Reserve Banks. Therefore, the difference between public and private banks decisions to return capital to owners can be tested. The main difference between public and private banks is their ownership structure. While public banks tend to have many shareholders who are disconnected from management, private banks generally have fewer owners who tend to be more actively engaged in managing or overseeing the banks management. This study finds that private and public banks do indeed respond differently to large free cash flow and high retained earnings. Public banks tend to return more capital as free cash flow and retained earnings increase compared to private banks.

The paper is structured as follows: Section 2 presents a survey of existing literature on the role that principal-agent costs play on corporate payout policy, section 3

describes the data used in this study, section 4 examines the empirical models used to test the theory laid out in section 3, section 5 discusses the results of the linear regressions and section 6 concludes the study.

2. Theory / Literature Review

According to Miller, Merton, and Modigliani, (1961) investors should be indifferent to corporate payout policy when valuing shares as long as the corporation's investment strategy remains the same. Investors should be indifferent if a company retains all of its earnings, because if investment remains the same the company will grow at the same rate and investors can mimic dividends by selling off a portion of their holdings. However, this line of reasoning doesn't hold up if investment decisions are affected by payout policy. Harford (1999) found that firms with large cash flows are more likely to attempt acquisitions and that those acquisitions tend to be value decreasing compared to companies with smaller cash flows. He notes that this provides strong evidence of principal-agent problems in cash rich firms and that the market tends to punish the cash rich firms who distribute little to none of their excessive free cash flow. This suggests that payout policy can influence investment decisions, so therefore shareholders shouldn't be indifferent to payout policy.

One way of measuring the principal-agent problem is retained earnings relative to the size of the company. Another measure is free cash flow, as defined by the amount of cash a company brings in through its income generating operations in excess of cash that is required to fund all projects exceed a required rate of return, as a key way to measure the principal-agent problem between managers and owners. DeAngelo (2004) argues that, as investors see retained earnings accumulate, they will increasingly pressure

managers to pay more dividends. Others, including Jensen (1986), tend to focus on the role free cash flow plays in increasing the principal-agent problem. Owners tend to focus on retained earnings and free cash flow as a potential problem for overinvestment because it is not subject to the same market discipline and monitoring that stock issues or debt is. If companies are reinvesting their funds inefficiently or plan an inefficient use for funds, it will be reflected in higher prices for capital if companies seek outside funding. Banks and investors purchasing new shares issued will penalize companies that are run inefficiently or have plans to invest in unprofitable projects however internally generated cash and equity carry no interest rate if they are to be reinvested back into the company. Therefore, earned equity more plausibly gives managers the opportunity to wastefully overinvest (DeAngelo, 2004).

Many studies on corporate payout policies tend to ignore share repurchases as an avenue of returning capital. Since 1982 there has been a significant increase in the number of shares repurchased, which makes using dividends alone less representative of capital returned to shareholders than it was in the past (Fama, 2000). This increase in repurchases is largely due to the SEC adopting Rule 10b-18 in 1982, which diminished the risk of companies coming under investigation for manipulating stock price under the Securities Exchange Act of 1934. In fact, 1998 was the first year since Rule 10b-18 in which cash distributed through stock repurchases actually exceeded cash distributed through dividends (Allen and Michaely, 2002). In a survey of financial executives, most executives responded that ideally their companies would rely heavily on share repurchases to return capital (Brav, 2005). Much of that is due to the fact that volatile share repurchase plans are more accepted by the market than volatile dividend payments.

Also, financial executives listed having excess cash or fewer profitable investments available as two of the main reasons they repurchased shares (Brav, 2005). This lends evidence that we should be including share repurchases as an additional measure of returned capital and also that capital is often paid out to avoid overinvesting. A dollar of dividends should be weighted the same as a dollar of share repurchases because if there was a significant disadvantage to using one form of capital repayment, no rational manager would essentially throw money away using an inefficient avenue to return capital.

Allen and Michaely (2002) note that a weakness in the principal-agent theory of corporate payout policy is that there is not a strong and clear mechanism for shareholders to induce managers to payout excessive cash flow and earnings. However, the literature provides several possible explanations. The most common way for shareholders to influence managers' policy is to vote with their money by bidding down share prices for companies which don't properly mitigate their principal-agent problems. This is effective if managers have significant ownership positions. Harford (1999) found evidence from market reactions to acquisition attempts that lends evidence that managerial stock ownership is seen to lessen principal-agent problems. He found that the more insider ownership there is of a company's stock the more positive the market reacts to deals announced by that company. Another way to make voting with your money effective in inducing corporations to return more capital is for companies to have managers' compensation be in the form of stock options. Fenn and Liang (2001) found that the use of stock options can be effective in mitigating serious principal-agent problems, but also noted that it also shifted payout from dividends to repurchases because

holders of stock options do not receive dividends. Voting with the wallet is also effective if companies desire to obtain more funds in the future from issuing new stock because then managers will have an incentive to raise the stock price in order to obtain better financing.

Pozen (1994) focuses on the role that institutional investors play on influencing payout policy. Managers that have incentives to drive up their stock price, have a strong incentive to please institutional investors because they are often a strong driving force behind stock prices. However, the vote with your money approach is significantly less effective if management is able to finance all of their projects internally. Also, sometimes institutional investors have strong tax and transaction costs incentives that lead them to lobby management for changes rather than sell out their position. If institutional investors choose to hold on to their position, they have several ways to influence management decisions to return capital. They can utilize, proxy fights for control, proxy campaigns against management proposals, shareholder resolutions, informal jawboning, and explanatory letters, each getting progressively cheaper and more used by institutional investors. Institutional investors can use these ways to directly influence management's payout policy or they can use their influence on the company's board of directors (Pozen, 1994).

White (1996) focuses on the role of the board of directors in this principal-agent problem. The board of directors is supposed to be overseeing management on behalf of shareholders but often is comprised of members inside of management. Institutional investors can use their influence to make sure that there are more outsiders part of the board of directors. Outsiders on the board of directors have significant personal

incentives to back shareholders interests so they can work on other boards. Also, shareholders can make use of dividend provisions that tie bonuses to dividend payouts. A common dividend provision is to limit the bonus pool available for employees and executives to some factor of dividends paid, or to set it up so that there is a sharp drop in bonus money available if dividends are cut. These types of dividend clauses are often found in large companies with slow growth that would likely be able to internally fund future projects (White, 1996).

In order to test this theory, this paper uses the set up of Cloyd's study in 2005, where he uses the banking sector to test how differing ownership structures affect dividend payments. Cloyd (2005) reasons that public and private banks will have varying degrees of principal-agent problems between managers and stockholders because of their different ownership structures, which will result in differences in payout policies between public and private companies. He says that because private banks' owners tend to be more directly involved in the management or oversight of management, there is less of a principal-agent problem in private banks than in public banks. Because there is less of a principal-agent problem, private bank owners will be more willing to let excess funds pile up with less fear of a renegade manager pursuing growth beyond that which is beneficial to owners (Cloyd, 2005).

Cloyd (2005) believes that his public versus private principal-agent problem is comparable to a cross country sample of firm's likelihood to pay out dividends because typical ownership structure of companies differs from country to country. La Porta (1999) conducted a study that found that countries with poor shareholder protection were more likely to have controlling shareholders who either managed the company directly or

were in a position to closely monitor managers. Whereas, countries with better shareholder protection laws were more likely to have more owners who were less involved in the company. In a follow up study he found that countries with poor shareholder protection, where shareholders are more likely to be more involved in running the company, had a dividend payout ratio lower than in countries with greater shareholder protection laws (La Porta, 2000). If the true cause of the lower dividend payout in countries with less shareholder protection is ownership structure and involvement, then we would expect to also see lower payout ratios among private banks than public banks because of similar differences in shareholder involvement.

A Fama and French (2000) study on the characteristics of dividend payers shows that dividend payments are positively related to size, capitalization and profitability because all of those characteristics increase a company's ability to pay out dividends (Fama, 2000). Clearly, a company with high earnings is going to be able to pay out more dividends than a company with no earnings that would likely have to borrow or liquidate assets in order to pay out dividends. Fama and French also found that dividend payments are negatively related to growth. Strong growth is a strong indicator that the company has superior investment opportunities and therefore a strong incentive to reinvest earnings (Fama, 2000). This can be seen in Buffett's company Berkshire Hathaway which has yet to pay any dividends because more wealth can be generated on owner's equity than owners could generate elsewhere if they had some of their capital returned to them (Hagstrom, 2004).

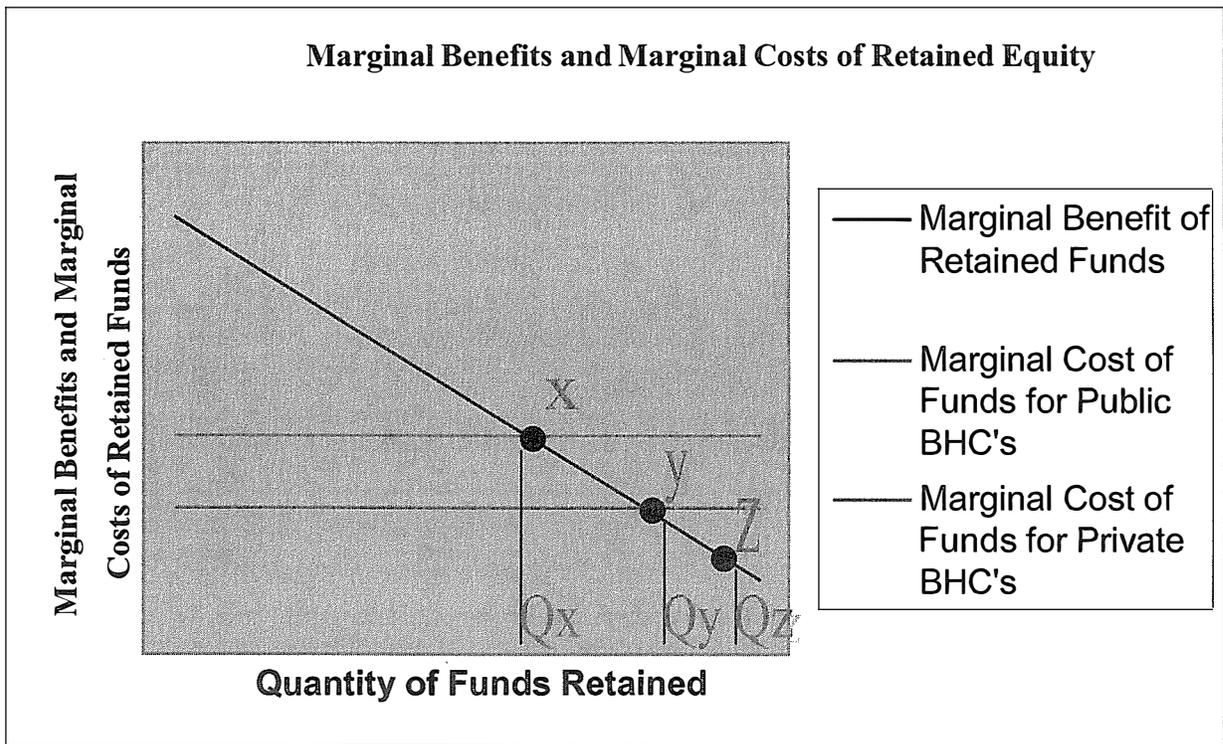
After reviewing the relevant literature, we are left with a basic marginal cost-benefit graph for retained earned equity. Figure 1 shows the marginal benefit curve as

being downward sloping because not all investment opportunities are equal and rational companies will invest in the best opportunities first. There also exists a marginal cost curve, because there are opportunity costs; each dollar retained could be returned and earn interest elsewhere. Also reflected in the marginal cost curve, are the costs of monitoring management to make sure they are using retained funds effectively. However, private companies' owners are more involved in running a company and therefore have a lower cost of monitoring managers for any quantity of retained capital. Therefore, the private cost curve will be shifted down from the public cost curve and *ceteris paribus*, a private company will retain a higher quantity of its capital. The assumption in this graph is constant returns to scale for the cost of monitoring additional funds and therefore a perfectly flat cost curve, however this assumption is not essential to the hypothesis. The important assumption is that the public cost curve is shifted up from the private cost curve.

In summary, the literature review and theory section suggest that the amount of capital returned depends on several factors. A bank's growth, capitalization, size, and profitability all affect a bank's ability to return capital, while its growth, amount of previous retained capital, free cash flow and ownership structure, all affect bank management's desire to return capital. Therefore, if all other factors are kept constant and a company found itself at point Z, due to total earnings and cash flow during the quarter, in Figure 1, owners would desire to be at point Y if it was a private company or point X if it was a public company. Therefore, in order to move to its equilibrium point, a company would return capital equal to $Q_z - Q_y$ if it was a private company or $Q_z - Q_x$ if it was a public company. With Q_z , Q_x and Q_y being the corresponding amount of capital retained

related to points Z, X, and Y. Because the marginal benefit curve is downward sloping and private companies have a lower cost curve, public companies will return more capital to owners than private companies if all other factors are controlled for.

Figure 1: Marginal Benefits and Marginal Costs of Retained Funds



3. Data

This study uses data from Federal Reserve Bank of Chicago and looks at the call reports from private and public bank holding companies. By restricting the data set to only bank holding companies, the effect of principal-agent costs on dividend payouts can be tested for because of differing ownership structures within the banking industry. Data is used from all four quarters of 2004 because there was a change in tax law enacted in 2003 that brings the income tax paid on dividends down to the same level as that paid on

long term capital gains. This minimizes the different tax incentives that companies face for dividend payments versus retaining capital. Also, the year 2004 was chosen because it was unaffected by the recent credit crunch, which is likely to greatly influence any bank study's results because of the extreme circumstances.

4. Empirical Model

The simple linear regression model shown in Table 1 tests whether public and private banks react differently to potential principal-agent problems. The dependent variable in the main model is the sum of cash spent on dividends and cash spent on share repurchases for the quarter divided by total assets. This differs from the Cloyd (2005) study which focuses on dividends and did not include share repurchases in the dependent variable. Fama and French (2000) argue that changes in treasury stock, which is common stock that a company owns in itself, is a good barometer for share repurchases and reissuance but Allen and Michaely (2002) note that changes in treasury stock can be a problematic way to measure payout because often companies retire shares when they repurchase them, which bias the reported amount of repurchases down. Also, using change in treasury stock runs into other complications. For example, when companies pay out stock for stock options to executives it usually comes from treasury stock. This means that by using change in treasury stock as a measure of repurchases a researcher picks up not only the financing decisions of share repurchases but also the investing decision in the compensation to executives. Instead Allen and Michaely (2002) recommend using cash spent on repurchases as shown on the statement of cash flows, which is what this study does. Model 2 and 3 look at the same independent variables but

separate out dividends and share repurchases into two dependent variables to see if these two means of returning capital are used to mitigate principal-agent problems in a similar way.

The regressions include a dummy variable for ownership, which takes on a value of 0 if the bank is public and 1 if a bank is private. This variable will catch the differences between public and private banks' payout policies that are not picked up by the interaction variables. These interaction variables between ownership structure and retained earnings divided by total assets, and between ownership structure and free cash flow are the key variables to focus on in the regressions. They will show whether theory is correct in predicting a higher payout ratio for public banks compared to private banks. In theory, the interaction variables will have a negative and significant coefficient for reasons stated earlier. If indeed, these interaction variables are negative while the original variable is positive it will lend strong evidence that indeed dividends are paid out to mitigate principal-agent problems and that private and public companies have differing principal-agent costs. It is unclear whether the dummy variable will have a negative coefficient or not. It depends on the differences between public and private banks that are not picked up by the two interaction variables that attempt to address the principal-agent issue. A true measure of free cash flow isn't used but cash from operations scaled for total assets is a pretty good approximation. Cash from operations less cash spent investing could have been used and would have better fit the traditional measure of free cash flow but it is inappropriate to assume that all the companies invested only what was prudent when this paper is built upon the assumption that managers have incentives to overinvest. Instead, by scaling operating cash flow by total assets it assumes that free

cash flow available is a function of total assets. This assumption is appropriate because depreciation of assets, with the exception of land and goodwill, is required by United States Generally Accepted Accounting Principles. Depreciation can be used as an approximation of minimum capital expenditures. Since depreciation is expected to be some factor of total assets and this factor should be relatively consistent from company to company because they are all bank holding companies, the scaling of operating cash flow by total assets normalizes it by bank size and also provides an approximation of free cash flow. It is not necessary to specify this factor because it would only affect the coefficient proportionately to the factor and would not influence the significance.

In order to correct for other possible differences in characteristics between public and private banks that would likely affect the results, some control variables have been included. To control for liquidity and profitability differences, the models include cash flow from operations. One would expect this to have a positive effect because increased liquidity allows banks to pay out dividends without significantly increasing the risk of not being able to meet short term debts, and increased profitability also allows for more dividends to be paid out. In order to control for principal-agent problems, retained earnings over total assets is included. The last control variable in the models is growth. This study uses percent change in quarterly earnings before taxes and extraordinary items compared to the previous quarter. It is slightly flawed in that it might be biased because of seasonal changes, how volatile quarterly earnings are and how short term the measure of growth is, but it should be an adequate measure of growth. Earnings before taxes and extraordinary items is included because it should result in a better look at true operations and smooth out extra variability that can be caused by taxes and extraordinary items. As

mentioned before, growth should be negatively related to payout because companies should retain more of their capital if they have better investment opportunities available. Also, because this study is looking at banks, it is important to include capitalization as a variable. If banks are struggling to meet the minimum capital reserve requirements, then they would be foolish to return capital. As a measure of capitalization the paper uses the bank's tier 1 capital, which is a bank's core capital and includes common stock equity and retained earnings and divided it by total liabilities. As discussed earlier, theory predicts a positive coefficient in front of the tier 1 ratio.

Although other studies have included other variables the models in this paper are limited to the control variables mentioned above. Total assets is not included as a independent variable because many of the other factors are already scaled for total assets. Past studies have included lagged dividends because public firms have an aversion to decreasing dividends. However, lagged dividends introduce a circular logic problem because then the model is testing current dividend policy based on past dividend policy, which was based on the same decision currently being tested (DeAngelo, 2004). Also, previous studies have used cash on hand as a predictor of dividends being paid out, but cash tends to fluctuate greatly for a variety of reasons that could confound the results. While large cash balances could be a build up of retained earnings waiting to be paid out, they could also be the result of a new capital infusion to finance a profitable investment opportunity in which case they would not be used for returning capital (DeAngelo, 2004). So in both cases cash increased greatly but it is caused by a factor that is covered in other control variables. Instead, cash flow is used because that is a better measure of cash

available to be invested or returned over the entire quarter rather than a glimpse at cash holdings at the quarterly cutoff date.

Table 1: Empirical Model

Dependent	
PAYOUT	(Cash spent on Dividends + Cash spent on Repurchases) / Total Assets
DIVPAYOUT	(Cash spent on Dividends) / Total Assets
REPPAYOUT	(Cash spent on Repurchases) / Total Assets
Independent	
PRIVATE	Public (0) or Private (1)
RE/TA	Retained Earnings / Total Assets
PRIVATE*RE/TA	PRIVATE* (Retained Earnings / Total Assets)
FCF	Cash flow from operations/ Total Assets
PRIVATE*FCF	PRIVATE * (Cash flow from operations / Total Assets)
GROWTH	Earnings before extraordinary items and taxes / Previous quarters earnings before extraordinary items and taxes
TIER1	Total Tier 1 capital / Total Liabilities
Q2	Dummy for quarter 2
Q3	Dummy for quarter 3
Q4	Dummy for quarter 4

5. Results

Table 2 illustrates differences between public and private companies. Public companies and private bank holding companies do not pay out significantly different amount of capital when controlled for total assets. However, all of the factors included in our regression that are believed to affect payout are significantly different.

As predicted in the theory section, public companies tend to have lower retained earnings as a percentage of total assets than private companies do. However, this could be due to factors other than a bank's decision to payout earnings and capital. Private companies had significantly higher cash flow, which was theorized to lead to higher

payout ratios. However, growth was significantly higher for private companies which would lead to private companies paying out less capital. Based on private companies having higher free cash flow and higher retained earnings, the fact that both public and private companies have the same payout means that either private banks' higher growth must play a large role in the dividend decision or else the build up of equity and free cash flow affects public and private banks' payout decision quite differently.

Table 2: Descriptive Statistics

	Means			Significance
	Combined	Public	Private	
PAYOUT	0.0030	0.0030	0.0030	0.725
DIVPAYOUT	0.0026	0.0021	0.0023	0.011
REPPAYOUT	0.0006	0.0009	0.0006	0.000
TA (Millions)	6.3924	14.542	3.0386	0.000
RETA	0.0588	0.0465	0.0638	0.000
FCF	0.0027	0.0024	0.0028	0.002
GROWTH	0.2506	0.1525	0.2916	0.100
TIER1	0.1041	0.1043	0.1041	0.883

The results from the regressions in Table 3 seem to reinforce the assumption that differing ownership structures in banks affects banks' decisions to return capital. Based on the results it appears that the principal-agent problem plays a significant role in how much capital is returned to owners. The adjusted R² for Model 1 is only .240 which suggests that there is much of banks' payout policies are left unexplained by these models but, nevertheless, the regressions have meaningful results.

The coefficient for the variable retained earnings divided by total assets has a significant and positive effect on capital returned. Based on the regression, for every increase in public bank holding companies' retained earnings equal to 1% of total assets,

the banks' capital returned increased by .024% of total assets. Also, the coefficient for the free cash flow variable has a positive and significant coefficient. Based on the regression, a \$1 increase in cash flow from operations results in a \$0.337 increase in payout. This is consistent with the study by Cloyd (2005), who found that public banks paid out more dividends as retained earnings increased relative to total assets and with other studies such as Jensen (1986) that suggest that dividends increase as free cash flow increases.

Table 3: Regression Results

	Model 1, Adj. R ² = .240, Sample size 8656		Model 2 Adj. R ² = .368, Sample size 8656		Model 3, Adj. R ² = .023, Sample size 8656	
Dependent						
	PAYOUT		DIVPAYOUT		REPPAYOUT	
	Beta	Sig.	Beta	Sig.	Beta	Sig.
Variable						
Constant	-3.832E-5	0.810	0.000	0.162	0.000	0.382
PRIVATE	0.001	0.002	0.000	0.000	8.537E-5	0.527
RE/TA	0.024	0.000	0.015	0.000	0.009	0.000
PRIVATE*RE/TA	-0.015	0.000	-0.011	0.000	-0.004	0.077
FCF	0.337	0.000	0.236	0.000	0.100	0.000
PRIVATE*FCF	-0.033	0.066	0.078	0.000	-0.111	0.000
GROWTH	-6.134E-6	0.654	-2.761E-6	0.754	-3.373E-6	0.745
TIER1	0.000	0.423	0.002	0.001	-0.002	0.000
Q2	0.001	0.000	0.001	0.000	0.000	0.018
Q3	0.002	0.000	0.001	0.000	0.000	0.000
Q4	0.003	0.000	0.002	0.000	0.001	0.000

An important finding was that the interaction between retained earnings divided by total assets and the ownership structure dummy variable had a significant and negative coefficient. This suggests that, in fact, private banks do have a different cost curve when it comes to retaining capital. When the interaction variable is taken together with the

original retained earnings divided by total assets variable, our regression suggests that for every increase in a private bank holding company's retained earnings equal to 1% of assets that bank's returned capital only increases by .009% of assets, as compared to .024% for public banks. The private bank coefficient for RE/TA is seen by adding the RE/TA coefficient and the coefficient from the interaction variable between RE/TA and ownership structure. Clearly, the two banks types are experiencing different cost curves for funds. Past theory suggests that this is due to ownership structure and its effect on the principal-agent problem between owners and managers. It is not clear based on the regression above whether the .009% increase is significant; however it is not crucial that this effect be positive. Cloyd (2005) found that for private banks there was an insignificant relationship between dividends and retained earnings as related to total assets. An inverse relationship between returned capital and retained earnings in private banks would not indicate that there is no principal-agent problem; it would just indicate that perhaps retained earnings divided by total assets picks up another relationship. The important thing to see is that the interaction variable is negative and significant.

The fact that the interaction variable between free cash flow and ownership structure also had a negative and significant coefficient lends even more evidence to the principal-agent theory on payout. When looked at together with the coefficient for free cash flow private banks only paid out \$0.304 for every \$1 increase in free cash flow compared to public banks who paid out \$0.337 for every \$1 increase in free cash flow. While this could possibly have a few different causes it does fit with the principal-agent prediction.

In order to look at the aggregate affect of both interaction variables along with the Private variable I looked at the theoretical case of two average banks. If two average banks as defined by the combined means from Table 2 are put in the Model 1 from Table 3 and one is private and the other is public it becomes clear that the graph in Figure 1 holds up to empirical testing. If that average bank were private it would return funds in the fourth quarter equal to 0.432% of its assets, while if public it would return funds equal to 0.475% of its assets in the form of dividends or share repurchase. The coefficient for PRIVATE would result in private banks returning additional earnings equal to .000539% of assets while the interaction variable with FCF would reduce capital returned by .0000896% and the interaction variable would reduce capital returned by .000873%. The interaction variables combine to trump the affects of the PRIVATE result but it appears that the PRIVATE*RE/TA interaction variable is the responsible for the majority of the difference.

The growth variable has the expected negative coefficient but is not significant. This is unexpected and doesn't fit with the residual theory of dividends. However, the insignificance potentially is from the poor measure of growth used in these models. The growth variable simply looks at quarterly growth, which tends to be more volatile than looking at a long term growth. It can also be biased because of seasonality or other short term trends or results in the market. When analyzing the average company's earning growth in the different quarters it is clear that quarterly growth is volatile. In the first quarter average growth was -.7353 while the second quarter had average company growth of .9256. The other two quarters fell in-between those two extremes, but it is clear that such a volatile measure of growth could influence results.

When looking at the regressions for Model 2 and Model 3 it is interesting to note that the decision to pay out dividends is significantly different than the decision to return capital in the form of share repurchases. When it comes to paying dividends it appears that ownership structures have significantly different views on the build up of retained earnings as shown by public banks increasing dividends by \$0.015 for every dollar increase in retained earnings, everything else equal, while private banks would only increase dividends by \$0.004 for the same increase in retained earnings. Similarly, public banks payout \$0.009 more capital in the form of repurchases for every \$1 increase in earnings, while private banks would payout only \$0.005 more for a similar increase. Surprisingly, private banks actually pay out more dividends as their free cash flow increases compared to public banks. This may be due to several reasons including the increased flexibility of dividends for private banks so they are a more perfect substitute for repurchases in private banks than public banks or increased liquidity considerations of individual owners. However, when looking at repurchases, public banks significantly increase their share repurchases when free cash flow increases, while private banks actually have a negative coefficient, which is likely insignificant. Because retained earnings are a more long term measure and are built up over a period of time while free cash flow is a temporary quarterly measure, the results from this study seem to suggest that in order to mitigate principal-agent problems, companies address long term issues through dividends while mitigating potential short term problems through share repurchases. This seems to lend additional evidence to Jonathan, Stephens and Weisbach (2000) who found evidence that dividends were paid out from permanent earnings while repurchases were paid out from temporary cash flows.

6. Conclusion

Payout policy is significantly influenced by the principal-agent problem between managers and agents. Managers have incentives to invest beyond the level that is optimal for owners. They stand to benefit from growth for the sake of growth while owners would like to maximize their return on their capital whether it is from reinvesting the retained earnings back into the bank or by investing that capital in another opportunity after banks have returned it. Therefore, as a bank's retained earnings increase and as free cash flow increases owners will want more capital returned in order to minimize the possibility of managers over investing.

However, our study lends evidence that because private banks tend to have more involved owners there is less of a principal-agent problem inherent in private banks. Therefore private banks have a different cost curve when it comes to retaining earnings and will be more willing to let retained earnings build up without returning them to owners in the form of dividends or stock repurchases. Our study tends to confirm that DeAngelo (2004) was correct in theorizing that dividends are paid out to avoid overinvesting. It also agrees with both the Cloyd (2005) and the LaPorta (2000) studies that found that with greater ownership involvement there is less of an incentive to pay out dividends to avoid overinvestment.

This study has little to no macroeconomic policy implications. However, it does potentially have some microeconomic implications. If it is assumed that most banks are behaving rationally, a tougher argument to make these days, then we can make inferences into whether or not an individual bank is returning capital optimally. A bank that returns

more capital than is expected might be seen negatively because they are potentially passing up profitable growth opportunities, while a bank that pays out too little might also be seen negatively because they might not properly be mitigating potential principal-agent problems.

Future research on this subject could improve the measure of growth used in this study to something that is a little more long term and less volatile than quarter over quarter growth. It would also be interesting to include a variable that looks at whether or not companies issued debt or equity in the quarter or if they do frequently. If companies are forced to subject themselves to outside monitoring the shareholders might be more willing to let companies retain funds. However, this could be problematic because if companies are looking for outside funding they probably don't have funds available to be returned to owners. Allen and Michaely also pointed out that a measure of corporate payout is biased if it doesn't include cash paid out to shareholders in merger and acquisition activities so correcting for that would improve the paper. Another interesting avenue for future research would look into why companies choose repurchases over dividends. The two models looking at repurchase and dividend decisions independently of each other and looking at the how differing ownership structure affected payout decisions provided interesting results.

REFERENCES

- Allen, F., and R. Michaely, 2003, "Payout Policy," in Constantinides, G., M. Harris and R. Stulz (eds.) *Handbook of the Economics of Finance* (Amsterdam: North-Holland).
- Brav, A., J. R. Graham, C. R. Harvey, and R. Michaely, 2004, Payout policy in the 21st century. NBER working paper 9657.
- Cloyd, C. Bryan, Robinson, John R. and Weaver, Connied D., Does Ownership Structure Affect Corporations' Responses to Lower Dividend Tax Rates? An Analysis of Public and Private Banks (May 25, 2005).
- DeAngelo, H., and L. DeAngelo, 2004, Payout policy irrelevance and the dividend puzzle. Working paper, University of Southern California.
- DeAngelo, H., L. DeAngelo, and R. M. Stulz, 2004, Dividend policy, agency costs, and earned equity. Working paper, University of Southern California.
- Easterbrook, Frank H., 1984, .Two Agency-Cost Explanations of Dividends,. *American Economic Review*, 74 (4), 650-659.
- Fama, E. and K. French, 2001, Disappearing dividends: Changing firm characteristics or lower propensity to pay? *Journal of Financial Economics* 60, 3-43.
- Federal Reserve Bank of Chicago, Bank Holding Company Data Files, Call Report for all 4 2004 quarters and the 4th quarter of 2003
- Fenn, G.W., Liang, N., 2001. Corporate payout policy and managerial stock incentives. *Journal of Financial Economics* 60, 45–72.
- Frankfurter, George M., Wood, Bob Jr., 2002. Dividend Policy Theories and their Empirical Tests., *International Review of Financial Analysis*, 11 (2002), 111-138
- Harford, Jarrad, 1999, Corporate cash reserves and acquisitions, *Journal of Finance* 54, 1969-1997.
- Hagstrom, Robert, *The Warren Buffet Way*, 2nd edition, (2004)
- Jagannathan, M., C. P. Stephens, and M. S. Weisbach, 1999, .Financial Flexibility and the Choice between Dividends and Stock Repurchases,. *Journal of Financial Economics* 57, 355-384.
- Jensen, Michael, 1986, Agency costs of free cash flow, corporate finance, and takeovers, *American Economic Review* 76, 323-329
- La Porta, R., F. Lopez-de-Silanes, and A. Shleifer. 1999. Corporate ownership around the world. *The Journal of Finance* 54 (2, April): 471-517.
- La Porta, R., F. Lopez-de-Silanes, A. Shleifer, and R. Vishny. 2000. Agency problems and dividend policies around the world. *The Journal of Finance* 55 (1, February): 1-33.
- Lang, Larry H. P. and Robert H. Litzenberger, 1989, .Dividend Announcements: Cash Flow Signaling vs. Free Cash Flow Hypothesis,. *Journal of Financial Economics*, 24 (1), 181-192.

- Miller, Merton and Franco Modigliani, 1961, .Dividend Policy, Growth and the Valuation of Shares,. Journal of Business, 34, 411-433.
- Pozen, Robert C., 1994. Institutional Investors; The Reluctant Activists. Harvard Business Review, 00178012, Jan/Feb94, Vol. 72, Issue 1
- White, L.F., 1996. Executive compensation and dividend policy. Journal of Corporate Finance 2, 335-358.