CHAPTER II

LITERATURE REVIEW

2.1 Dividends

A distinctive feature of corporations is that they issue shares of stock and authorized by law to pay dividends to the holders of those shares. Dividends paid to shareholders represent a return on the capital directly or indirectly contributed to the corporation by the shareholders. The payment of dividends occurs at the discretion of board of directors (Ross et al., 2008, p409). Some characteristics of dividends are:

1. Unless a dividend is declared by the board of directors of a corporation, it is not a liability of the corporation. A corporation cannot default on an undeclared dividend.
2. The payment of dividends by the corporation is not a business expense. Dividends are not deductable for corporate tax purposes. In short, dividends are paid out of after-tax profits of the corporations.
3. Dividends received by individual shareholders are for the most part considered ordinary income by the Internal Revenue Service (IRS) and are fully taxable.

The term *dividend* usually refers to a cash distribution of earnings. If a distribution is made from sources other than current or accumulated retained

earnings, the term *distribution* rather than dividend is used. However, it is acceptable to refer to a distribution from earnings as a *dividend* and a distribution from capital as a *liquidating dividend*. The most common type of dividend is in the form of cash. Public companies usually pay *regular cash dividends* four times a year. Sometimes firms will pay a regular cash dividend and an extra cash dividend. Paying cash dividend reduces corporate cash and retained earnings – except in the cash of liquidating dividend (where paid-in capital may be reduced). Another type of dividend is paid out in shares of stock, referred to as a *stock dividend*. It is not a true dividend because no cash leaves the firm. A stock dividend increases the number of shares outstanding, thereby reducing the value of each share. It commonly expressed as a ratio, for example, with a 2 percent stock dividend a shareholder receives 1 new share for every 50 currently owned.

The amount of dividend is expressed as dollars per share (*dividend per share*), as a percentage of market price (*dividend yield*), or as a percentage of earnings per share (*dividend payout*) (Ross et al., 2008, pp 510-511).

Dividend policy may vary in its implementation. However, in this simple world, dividend policy does not matter. That is, managers choosing either to raise or lower the current dividend do not affect the current value of their firm. This theory is powerful, and the work of Miller and Modigliani (MM) is generally considered a classic in modern finance. An increase in dividends through issuance of new shares neither helps nor hurts the stockholders. Similarly, a reduction in dividends through share repurchase neither helps nor hurts stockholders. If we relate to investment policy, firms should never give up a positive net present value (NPV) project to

increase a dividend (or to pay dividend for the first time). This idea was implicitly considered by MM. One of the assumptions underlying their dividend irrelevance proposition was this: “The investment policy of the firm is set ahead of time and is not altered by changes in dividend policy” (Ross et al, 2008, pp 516-517).

Related to decision on dividend payment, Ross et al. state that firm may consider the following alternatives to a dividend:

1. Select additional capital budgeting projects. Because the firm has taken all the available positive NPV projects already, it must invest its excess cash in negative NPV projects. This is clearly a policy at variance with the principles of corporate finance. In spite of distaste of this policy, researchers have suggested that many managers purposely take on negative NPV projects in lieu of paying dividends, as for example stated by M. C. Jensen in “Agency Costs of Free Cash Flows, Corporate Finance and Takeovers”, American Economic Review (May 1986).
2. Acquire other companies. To avoid the payment of dividends, a firm might use excess cash to acquire another company. This strategy has the advantage of acquiring profitable assets. However, a firm often incurs heavy costs when it embarks on an acquisition program. Therefore, a company making an acquisition merely to avoid a dividend is unlikely to succeed.
3. Purchase of financial assets. For the firm with extra cash, the dividend payout decision will depend on personal and corporate tax rates. If personal tax rates higher than corporate tax rates, a firm will have an incentive to reduce

dividend payouts and choose to invest in other financial assets, for example Treasury Bills. However, if personal tax rates are lower than corporate tax rates, a firm will have an incentive to pay out any excess cash as dividends.

4. Repurchase shares. Similar to previous section above, firm may exercise either dividend tax or repurchase capital gain is higher.

Despite alternatives above, there are reasons why a firm might pay its shareholders high dividends even in the presence of personal taxes on these dividends, as follows:

1. Desire for current income. It has been argued that many individuals desire current income. The classic example is the group of retired people and others living on a fixed income. These individuals would bid up the stock price should dividends rise and bid down the stock price should dividends fall. Although this argument does not hold in Miller and Modigliani's theoretical model, the current income argument is relevant in the real world.
2. Behavioral finance. The ideas of behaviorists represent a strong challenge to the theory of efficient market. It turns out that behavioral finance also has an argument for high dividends. The basic idea here concerns self-control, a concept that, though quite important in psychology, has received virtually no emphasis in finance. Investors must also deal with self-control.
3. Agency costs. Although stockholders, bondholders, and management form firms for mutually beneficial reasons, one party may later gain at the other's expense. For example, take the potential conflict between bondholders and stockholders. Bondholders would like stockholders to leave as much cash as

possible in the firm so that this cash would be available to pay the bondholders during times of financial distress. Conversely, stockholders would like to keep this extra cash for themselves. That's where dividends come in. Managers, acting on behalf of the stockholders, may pay dividends simply to keep the cash away from the bondholders. In other words, a dividend can be viewed as a wealth transfer from bondholders to stockholders. To protect themselves, bondholders frequently create loan agreements stating that dividends can be paid only, if the firm has earnings, cash flow, and working capital above specified levels.

4. Information content of dividends and dividend signaling. While there are many things researchers do not know about dividends, one thing for sure: The stock price of a firm generally rises when the firm announces a dividend increase and generally falls when a dividend reduction is announced. A dividend increase is management's signal to the market that the firm is expected to do well. The rise in the stock price following the dividend signal is called the information content effect of the dividend. The information content effect implies that stock price may rise when dividends are raised – if dividends simultaneously cause stockholders to increase their expectations of future earnings and cash flows.

Table below summarize the pros and cons of paying dividends.

Table 1 The Pros and Cons of Paying Dividends

Pros	Cons
1. Dividends may appeal to	1. Dividends are taxed as

investors who desire stable cash flow but do not want to incur the transaction costs from periodically selling shares of stock. 2. Behavioral finance argues that investors with limited self-control can meet current consumption needs with high-dividend stocks while adhering to the policy of never dipping into principal. 3. Managers, acting on behalf of stockholders, can pay dividends in order to keep cash from bondholders. 4. The board of directors, acting on behalf of stockholders, can use dividends to reduce the cash available to spendthrift managers. 5. Managers may increase	ordinary income 2. Dividends can reduce internal sources of financing. Dividends may force the firm to forgo positive NPV projects or to rely on costly external equity financing. 3. Once established, dividend cuts are hard to make without adversely affecting a firm's stock price.

dividends to signal their optimism concerning future cash flow.	

Brealey and Myers (2003, pp 437-438) stated that in the mid-1950s John Lintner conducted a classic series of interviews with corporate managers about their dividend polices. His description of how dividends are determined can be summarized in four "stylized facts":

1. Firms have long-run target dividend payout ratios. Mature companies with stable earnings generally pay out high proportion of earnings; growth companies have low payouts (if they pay any dividends at all).
2. Managers focus more on dividend changes than on absolute levels. Thus, paying a $2.00 is an important decision if last year's dividend was $1.00, but no big deal if last year's dividend was $2.00.
3. Dividend changes follow shifts in long-run, sustainable earnings. Managers "smooth" dividends. Transitory earnings changes are unlikely to affect dividend payouts.
4. Managers are reluctant to make dividend changes that might have to be reversed. They are particularly worried about having to rescind a dividend increase.

Lintner developed a simple model which is consistent with these facts and explains dividend payment as well. The dividend payment in the coming year (DIV_1) would equal to a constant proportion of earning per share (EPS_1):

DIV_1 = target dividend

= target ratio x EPS_1

The dividend change would equal

$DIV_1 - DIV_0$ = target change

= target ratio x $EPS - DIV_0$

A firm that always stuck to its target payout ratio would have to change its dividend whenever earnings changed. According to Lintner's survey, the managers believed that the shareholders prefer a steady progression in dividends. Therefore, even if circumstances appeared to warrant a large increase in their company dividend, they would move only partway toward their target dividend. Their dividend changes therefore seemed to confirm to be following model:

$DIV_1 - DIV_0$ = adjustment rate x target change

= adjustment rate x (target ratio x $EPS - DIV_0$)

The more conservative the company, the more slowly it would move toward its target and, therefore, the lower would be its adjustment rate.

Lintner's simple model suggests that the dividend depends on in part on the firm's current earnings and in part on the dividend for the previous year, which in turn depends on that year's earnings and the dividend in the year before. If a firm chooses a high dividend payout without the cash flow to back it up, that firm will ultimately have to reduce its investment plans or to investors for additional debt or

equity financing. All of these consequences are very costly. Therefore, most managers don't increase dividends until they are confident that sufficient cash will pay in to pay them.

Referring to website reference (www.investopedia.com), Lintner's dividend model is a model stating that dividend policy has two parameters: (1) the target payout ratio and (2) the speed at which current dividends adjust to the target.

According to website reference (www.investopedia.com), agency costs mean a type of internal cost that arises from, or must be paid to, an agent acting on behalf of a principal. Agency costs arise because of core problems such as conflicts of interest between shareholders and management. Shareholders wish for management to run the company in a way that increases shareholder value. But management may wish to grow the company in ways that maximize their personal power and wealth that may not be in the best interests of shareholders.

Quoted from Investopedia, some common examples of the principal-agent relationship include: management (agent) and shareholders (principal), or politicians (agent) and voters (principal). Agency costs are inevitable within an organization whenever the principals are not completely in charge; the costs can usually be best spent on providing proper material incentives (such as performance bonuses and stock options) and moral incentives for agents to properly execute their duties, thereby aligning the interests of principals (owners) and agents.

2.2 Debts

A firm's basic resource is the stream of cash flows produced by its assets. When the firm is financed entirely by common stock, all those cash flows belong to stockholders. When it issues both debt and equity securities, it undertakes to split up the cash flows into two streams, a relatively safe stream that goes to the debt holders and more risky one that goes to the stockholders. The firm's mix of different securities is known as its capital structure (Brealey and Myers, 2003, p465).

According to Ross et al. (2008, p479), the theories of capital structure are among the most elegant and sophisticated in the field of finance. Financial economists should (and do!) pat themselves on the back of contributions in this area. Prescriptions for capital structure under either the trade-off model or the pecking-order theory are vague by comparison. No exact formula is available for evaluating the optimal debt-equity ratio. The following empirical regularities are worthwhile to consider when formulating capital structure policy.

1. Most corporations have low debt-asset ratios
2. A number of firms use no debt
3. There are differences in the capital structure of different industries
4. Most corporations employ target debt-equity ratios

Ross et al. (2008) also stated that debt securities can be short-term (maturities of one year or less) or long-term (maturities of more than one year). Short-term debt

is sometimes referred to as unfunded debt and long-term debt as funded debt. Long-term debt securities are promises by the issuing firm to pay interest and principal on the unpaid balance. The maturity of long-term debt instruments refer to the length of time the debt remains outstanding with some unpaid balance.

Long-term debt is typically repaid in regular amounts over the life of the debt. The payment of long-term debt by installments is called amortization. At the end of the amortization, the entire indebtedness is said to be extinguished. Each year the corporation places money into a sinking fund, and the money is used to buy back the bonds. Debt may be extinguished before maturity by a call. Historically, almost all publicly issued corporate long-term debt has been callable. These are debentures or bonds for which the firm has the right to pay a specific amount, the call price, to retire (extinguish) the debt before the stated maturity date. The call price is always higher than the par value of the debt.

Debt is also categorized by seniority and subordinated type. Seniority indicates preference in position over other lenders. Some debt is subordinated. In the event of default, holders of subordinated debt must give preference to other specified creditors. Usually, this means that the subordinated lenders will be paid off only after the specified creditors have been compensated. However, debt cannot be subordinated to equity.

A firm with low anticipated profits will likely to take on a low level of debt. A small interest deduction is all that is needed to offset all of this firm's pretax profits. And too much debt would raise the firm's expected distress costs. A more successful would probably take on more debt. This firm could use extra interest to reduce the

taxes from its greater earnings. Being more financially secure, this firm would find its extra debt increasing the risk of bankruptcy only slightly. In other words, rational firms raise debt levels (and the concomitant interest payments) when profits are expected to increase. Rational investors are likely to infer a higher firm value from a higher debt level. Thus, these investors are likely to bid up a firm's stock price after the firm has, say, issued debt in order to buy back equity. Investors view debt as a signal of firm value. The market infers from an increase in debt that the firm is better off, leading to a stock price rise. Conversely, the market infers the reverse from a decrease in debt, implying a stock price fall. Thus, managers signal information when they change leverage.

The change in the value of the firm when debt is substituted for equity is the difference between (1) the tax shield on the debt and (2) the increase in the costs of financial distress (including the agency cost of debt). Now the change in the value of the firm is (1) the tax shield on debt plus (2) the reduction in agency cost of equity minus (3) the increase in the costs of financial distress (including the agency cost of debt). The optimal debt-equity ratio would be higher in a world with agency cost of equity than in a world without these costs. However, because costs of financing distress are so significant, the costs of equity do not imply 100 percent debt financing.

As quoted by Ross from Jensen's article (1986), more wasteful activity in a firm with a capacity to generate large cash flows than in one with a capacity to generate only small cash flows. Free cash flow hypothesis has important implications for capital structure. Since dividends leave the firm, they reduce free cash flow. Thus, according to the hypothesis, an increase in dividends should benefit the stockholders

by reducing the ability of managers to pursue wasteful activities. The hypothesis has important implications for capital structure. Furthermore, since interest and principal also leave the firm, debt reduces free cash flow as well. In fact, interest and principal should have a greater effect than dividends have on the free-spending ways of manager, because bankruptcy will occur if the firm is unable to make sure future debt payments. By contrast, a future dividend reduction will cause fewer problems to the managers, since the firm has no legal obligation to pay dividends. Because of this, the free cash flow hypothesis argues that a shift from equity to debt will boost firm value.

A bond is a certificate showing that a borrower owes a specified sum. To repay the amount, the borrower agrees to provide interest and principal payments on designated dates. In other term, a bond is a loan, when we buy a bond, we become a lender. The bond issuer can be a corporation or government, therefore the bond issued is called corporate bond or government bond, respectively.

In their book of Modern Financial Management, Ross et al. (2008, pp 589-591) also express the debt rating topic. Firms frequently pay to have their debt rated. The two leading bond-rating firms are Moody's Investors Service and Standard & Poor's. The debt ratings depend on (1) the likelihood that the firm will default and (2) the protection afforded by the loan contract in the event of default. The ratings are constructed from information supplied by the corporation, primarily the financial statements of the firm. The rating classes are shown in the accompanying box. The highest rating debt can have is AAA or Aaa. Debt rated AAA or Aaa is judged to be the best quality and to have the lowest degree of risk. The lower rating is D, which indicates that the firm is in default. Since the 1980s, a growing part of corporate

borrowing has taken the form of low-grade bonds. These bonds are also known as either high-yield bonds or junk bonds. Low-grade bonds are corporate bonds that are rated below investment grade by the major rating agencies (which are, below BBB for Standard & Poor's or Baa for Moody's).

Table 2 Standard & Poor's and Moody's Bonds Rating

	Very High Quality	**High Quality**	**Speculative**	**Very Poor**
Standard & Poor's	AAA AA	A BBB	BB B	CCC CC C D
Moody's	Aaa Aa	A Baa	Ba B	Caa Ca C D

At times both Moody's and Standard & Poor's adjust these ratings. S&P uses plus and minus signs: A+ is the strongest A rating and A- the weakest. Moody's uses a 1, 2, or 3 designation, with 1 indicating the strongest. These increments are called notches.

Moody's	**S&P**	
Aaa	AAA	Debt rated Aaa and AAA has the highest rating. Capacity to pay interest and principal is extremely strong.
Aa	AA	Debt rated Aa and AA has a very strong capacity to pay interest and repay principal. Together with the highest rating, this group comprises the high-grade bond class.

A	A	Debt rated A has a strong capacity to pay interest and repay principal. However, it is somewhat more susceptible to adverse changes in circumstances and economic conditions.
Baa	BBB	Debt rated Baa and BBB is regarded as having an adequate capacity to pay interest and repay principal. Whereas it normally exhibits adequate protection parameters, adverse economic conditions or changing circumstances are more likely to lead to a weakened capacity to pay interest and repay principal for debt in this category than in higher-rated categories. These bonds are medium-grade obligations.
Ba B Caa Ca	BB B CCC CC	Debt rated in these categories is regarded, on balance, as predominantly speculative. Ba and BB indicate the lowest degree of speculation, and Ca and CC is the highest. Although such debt is likely to have some quality and protection characteristics, these are outweighed by large uncertainty or major

		risk exposure to adverse conditions.
C	C	This rating is reversed for income bonds on which no interest is being paid.
D	D	Debt rated D is in default, and the payment of interest and/or repayment of principal is in arrears.

Source: Data from various editions of Standard & Poor's Bond Guide and Moody's Bond Guide.

The investment community has labeled bonds with a Standard & Poor's rating of BB and below or a Moody's rating of Ba and below as junk bonds. These bonds are also called high-yield or low-grade; these all terms can be used interchangeably.

2.3 The Pecking Order of Financing Choices

In their book of Principles of Corporate Finance, Brealey and Myers (2003, pp 511-514) stated that the pecking-order theory starts with asymmetric information – a fancy term indicating that managers know more about their companies' prospects, risks, and values than do outside investors. Asymmetric information affects the choice between internal and external financing and between new issues of debt; and finally with new issues of equity. New equity issues are a last resort when the company runs out of debt capacity, that is, when the threat of costs of financial distress brings regular insomnia to existing creditors and to financial managers.

The pecking-order theory of corporate financing goes like this.

1. Firms prefer internal finance
2. They adapt their target dividend payout ratios to their investment opportunities, while trying to avoid sudden changes in dividends
3. Sticky dividend policies, plus unpredictable fluctuations in profitability and investment opportunities, mean that internally generated cash flow is sometimes more than capital expenditures and other times less. If it is more, the firm pays-off debt or invest in marketable securities. If it is less, the firm first draws down its cash balance or sells its marketable securities.
4. If external finance is required, firms issue the safest security first. That is, they start with debt, then possibly hybrid securities such as convertible bonds, then perhaps equity as the last resort.

In this theory, there is no well-defined target debt-equity mix, because there are two kinds of equity, internal and external, one at the top of pecking order and one at the bottom. Each firm's observed debt ratio reflects its cumulative requirement for external finance.

The pecking-order explains why the most profitable firms generally borrow less – not because they have low target debt ratios but because they don't need outside money. Less profitable firms issue debt because they don't have internal funds sufficient for their capital investment programs and because debt financing is the first on the pecking order of external financing. In this theory, the attraction of interest tax shields is assumed to be a second-order effect. Debt ratios change when

there is an imbalance of internal cash flow, net of dividends, and real investment opportunities. Highly profitable firms with limited investment opportunities work down to low debt ratios. Firms whose investment opportunities outrun internally generated funds are driven to borrow more and more.

This theory explains the inverse intra-industry relationship between profitability and financial leverage. Suppose firms generally invest to keep up with the growth of their industries. Then rates of investment will be similar within an industry. Given sticky dividend payouts, the least profitable firms will have less internal funds and will end up borrowing more. This theory is less successful in explaining inter-industry differences in debt ratios. For example, debt ratios tend to be low in high-tech, high growth industries, even when the need for external capital is great. There are also mature, stable industries – electric utilities, in which ample cash flow is not used to pay down debt. High dividend payout ratios give the cash flow back to investors instead.

Ross et al. (2008, pp 474-475) explain a number of implications associated with the pecking-order theory are at odds with those of the trade-off theory (approach between the tax benefits of debt and the cost of financial distress).

1. There is no target amount of leverage. According to the trade-off model, each firm balances the benefits of debt, such as the tax shield, with the costs of debt, such as the distress costs. The optimal amount of leverage occurs where the marginal benefit of debt equals the marginal cost of debt. By contrast, the pecking-order theory does not imply a target amount of leverage. Rather, each

firm chooses its leverage ratio based on financing needs. Firms fist find projects out of retained earnings. This should lower the percentage of debt in the capital structure because profitable, internally funded projects raise both the book value and the market value of equity. Additional projects are funded with debt, clearly raising the debt level. However, at some point the debt capacity of the firm may be exhausted, giving away to equity issuance. Thus, the amount of leverage is determined by the happenstance of available projects. Firms do not pursue a target ratio of debt to equity.

2. Profitable firms use less debt. Profitable firms generate cash internally, implying less need for outside financing. Because firms desiring outside capital turn to debt first, profitable firms end up relying on less debt. The trade-off model does not have this implication. Here the greater cash flow of more profitable firms creates greater debt capacity. These firms will use that debt capacity to capture the tax shield and the other benefits of leverage.
3. Companies like financial slack. The pecking-order theory is based on the difficulties of obtaining financing at a reasonable cost. A skeptical investing public thinks a stock is overvalued if the managers try to issue more of it, thereby leading to a stock price decline. Because this happens with bonds only to a lesser extent, managers rely first on bond financing. However, firms can only issue so much debt before encountering the potential costs of financial distress.

2.4 Researches Related with Dividend and Bond

A number of journals have been published internationally to convey dividend and bonds relationship. The existence of dividends in the face of this, and despite the cost of paying them out and raising new money, suggest that it is appropriate to ask a different question" "what is the effect of a consistent policy of paying dividends?" This question leads to what could be called a naïve explanation of dividends. Dividends exist because they influence the firm's financing policies, because they dissipate cash and induce firms to float new securities (Easterbrook, 1984).

Iqbal (1991) conducted a study examining the stock market reaction to an increase in dividend payments and concurrent issuance of bonds. It is hypothesized that stock market reaction to an increase dividends on new debt securities issued by a firm; an analogous hypothesis is that complementary dividends payments affect the extent to which stockholders react to the issuance of new debt securities. The results indicate that an issuance of new debt securities affects the stock market reaction to a dividend increase. In his study, Iqbal gathers initial sample of 437 firms that are identified from the Moody's Bond Survey and the Wall Street Journal Index, 1973 through 1985, which either increase their quarterly dividends or issued new debt or both. The initial sample is reduced to 141 firms by screening out firms that have other significant events surrounding the events used in this study. These firms are grouped into four non-overlapping categories as follows:

Table 3 Description of Sample Used in Iqbal's study

Description of the Sample Used in the Study

Category	Event Description* Complementary Event	Main Event	Number of Firm
I	New Debt Issue	Dividend Increase	32
II	No-New Debt Issue	Dividend Increase	52
III	Dividend Increase	New Debt Issue	32
IV	Dividend Unchanged	New Debt Issue	25

* The events in Table 1 are actual; announcements of the specific events.

Source: American Business Review Journal p.64

The study uses the Multivariate Regression Model to estimate excess stock returns or prediction error in the main event period and Cross-sectional Regression Model to analyze the stock market reaction to the main events in terms of the complementary events. A comparison of the findings of category I and category II reveals that stock market reaction to a dividend-increase announcement depends on an issuance of new debt securities preceding the dividend-increase announcement. This is consistent with the proposition of Miller and Rock's study in 1985 that dividends and new external financing are complimentary signals. Meanwhile, a dividend increase preceding a new debt issuance does not significantly affect abnormal stock performance to a new debt issue. The findings indicate that an increase in dividends is beneficial to the stockholders if it follows external debt financing.

Dhillon and Johnson (1994) find that the bond price reaction to announcements of large dividend changes is opposite to the stock price reaction. In their paper, they examine the impact of dividend changes on both the stock and bond markets. It is interesting because of the possibility of distinguishing between two

important hypotheses: the information content hypothesis and the wealth redistribution hypothesis. Although each of these hypotheses is consistent with a positive stock price reaction to a dividend increase, the predicted bond price reactions are different: Information content implies bond prices should increase when dividend increases are announced, and wealth redistribution implies bond prices should fall. Dhillon and Johnson use data from Data Resources Inc. to gather samples of dividend decreases and of large dividend increases. Samples are identified from the COMPUSTAT and CRSP Master Tape, and announcement dates are confirmed from the Wall Street Journal Index. Bond price information is from the Wall Street Journal and Data Resources Inc., with interest ex payment dates from Moody's Bond Record. The samples are limited to firms with stocks and bonds traded on the New York Stock Exchange (NYSE) or American Stock Exchange (AMEX).

Dhillon and Johnson find 11,140 dividend increases occurring between January 1978 and December 1987. They also collect other dividend categories. After eliminating firms that do not have bonds traded on the NYSE or AMEX and omitting firms with simultaneous announcements, the full dividend change sample consists of 131 announcements, 61 dividend increases, and 70 dividend decreases. In the journal, they use mean-adjusted returns methodology. The result shows that bond prices decline when dividends are increased, whereas bond prices increase when dividends decrease, and wealth redistribution effect is statistically significant for the combined samples.

In Johnson (1995) journal, he quotes Jensen's review (1986) which says that free cash flows, or cash flows remaining after funding all profitable projects, can be

invested unprofitably by managers wishing to retain control over these funds. Both debt and dividends payments reduce this problem by reducing the amount of free cash under management control. He also quotes Ravid and Sarig's journal (1991) which views debt and dividends as informational equivalents in a signaling model in which firms use both devices to commit to pay out cash. In their model, debt and dividends do not reduce free cash, but rather are signals of future earnings or firm quality.

Johnson examines the effects of straight debt issues, but differs from previous studies by arguing that the share price response should depend on dividend payout model. He argues that debt issues should be more beneficial for firms with low dividend payout. According to his research, average share price response to announcements of straight debt issues is significantly positive for low dividend payout firms, and insignificantly different from zero for high dividend payout firms. Moreover, the mean share price response for low dividend payout firms is statistically significantly greater than the mean response for high dividend payout firms. Furthermore, cross-sectional share price effects are negatively related to firms' dividend payout ratios. The results support arguments that debt and dividends are substitute control or signaling devices. The results also support arguments that debt provides signaling or free cash flow benefits for firms, but suggest the benefits are significant only for firms with low levels of substitute devices.

He further classifies the sample by growth because firms choosing to pay low dividends and retain most of their internally generated funds may be more likely to be growth firms, and thus experience different share price reactions than high dividend

firms. The results are consistent with arguments that low growth firms have greater free cash flow problems and/or lower debt agency costs.

Johnson also investigates the importance of recent capital market visits by firm announcing bond issues. As he refers to Rozeff's journal (1982) and Easterbrook's review (1984) in his journal, firms pay out internally generated capital as dividends so they will have to enter external capital markets more frequently. Among low growth firms, those with high dividend payout should enter capital markets more frequently. If low dividend payout firms raise external capital less frequently, and thus are monitored less frequently, they may benefit more from the monitoring engendered by new debt issues. He finds that, among low growth firms, high dividend payout firms enter public capital market significantly more frequently than low dividend payout firms. In contrast, among high growth firms, capital market visit frequency does not differ significantly across low and high dividend payout firms.

He next estimates multiple-weighted least squares regressions to test the importance of dividend payout while controlling for several other factors. He includes in the regression Leverage, defined as book value of long-term debt divided by book value of firm assets. Firms with low dividend payout can be expected, ceteris paribus, to have lower leverage since retained earnings increase book value of equity. Though, he does not find a significant difference in mean leverage across low and high dividend payout firms. Firms with lower leverage may have lower agency cost of debt and thus experience more favorable reactions to bond announcements.

Aivazian, Booth and Cleary (2006) examine the interaction between the firm's debt decision and its dividend policy. They show that the type of corporate debt a firm has outstanding (bank debt of public debt) plays an important role in determining the firm's dividend policy.

They find firms that regularly access public debt (bond) markets are more likely to pay a dividend and more subsequently follow a dividend smoothing policy than firms that rely exclusively on private (bank) debt. This occurs because the use of private (bank) debt reduces the value of the signaling and agency reduction roles typically fulfilled by dividend payments. In particular, firms with bond ratings follow a traditional Lintner's style dividend smoothing policy, where the influence of the prior dividend payment is very strong and the current dividend is relatively insensitive to current earnings.

They observe the decision to pay a dividend by analyzing a variety of fundamental firm characteristics. We then extend these characteristics to include factors that cause the firm to seek public arms length rather than private informed debt markets. Conditional on these factors, they then estimate the classic Lintner's dividend adjustment model, where the decision to smooth dividends or adopt a residual dividend policy depends on public market access. According to the best of their knowledge, no one has previously examined the direct impact of the decision to issue public market debt on firm's dividend policy.

In their journal, they cite Miller and Modigliani's journal which introduced the residual theory of dividends based on the firm's sources and uses of funds. Based on this theory, they would expect the following outcomes: firms with higher profits

should pay higher dividends; firms with higher investment rates should pay lower (or zero) dividends; firms with higher future growth opportunities should build up cash for future investments and consequently make lower dividend payments; and firms facing higher debt constraints will have less financial flexibility and thus pay lower dividends. While these four fundamental factors can be expected to influence the dividend decision, they indicate little about how the firm's dividend payments are implemented as a dividend policy. The excerpt of Lintner's review (1956) on their paper says that Lintner was the first to consider this when he observed that firms tended to follow an adaptive process in setting their dividend. He estimated the following equation,

$$d_{i,t} = a_i + b_i e_{i,t} + c_i d_{i,t-1} + \varepsilon_i,$$

where the actual dividend ($d_{i,t}$) was an adjustment of the existing dividend ($d_{i,t-1}$) to the target dividend, which he hypothesized was determined by the firm's target payout rate and normalized earnings ($e_{i,t}$). In the Lintner's model c_i is the adjustment coefficient, a_i is a fixed time-series intercept, and ε_i is a random error term.

Public bond markets are dominated by dispersed institutional investors. In Aivazian, Booth and Cleary's research, data on bond holdings for 1990 and 1999 (not reported here) suggest that bonds are important assets for institution with long-term liabilities. For example, in 1990 approximately 62% of all outstanding bonds were held by insurance companies, savings institutions, retirement funds, and private pension funds. By 1999, this share had dropped to 47%, mainly due to an increase in foreign holdings from 12.7% to 18.0% and of bond funds from 3.5% to 8.1%. Riskier

firms with rapid growth prospects facing significant informational asymmetries are more likely to choose bank debt over public market debt. In contrast, lower risk, more profitable firms with fewer growth prospects are more likely to issue public market debt, where they also have access to longer term funds. Aivazian, Booth and Cleary‘s discussion points to a strong interaction between dividend policy and the type of debt issued by a firm. They have already indicated that profitable firms with spare debt capacity and low growth opportunities (which is often proxied by the market-to-book (M/B) ratio) are more likely to pay dividends. They argue that small firms with high M/B ratios and few tangible assets are riskier than larger firms with low M/B ratios and a higher proportion of tangible assets. The firms most likely to pay a dividend are also likely to access the public debt markets if they are larger and have more tangible assets. In this case, they are also more likely to follow a Lintner style dividend smoothing policy. In contrast, firms that are unlikely to pay dividends are more likely to seek out the lower rescheduling risks attached to informed bank debt if they are also smaller with few tangible assets. Hence, these firms follow a residual dividend policy.

Aivazian, Booth and Cleary use annual dividend data collected for the 1981 to 1999 period from the Research Insight (U.S. Compustat) database. They end up with an unusually comprehensive data set with a total number of 127,516 firm-year observations from all SIC industry groups. Approximately 39% (or 49,300) of these observations involved a firm that made a dividend payment. Bond ratings were also collected, but these data were only available from 1985. Over the period 1985 – 1999, there were 104,223 observations, of which 18,675 (17.9%) were for firms with bond

ratings. Approximately 67% (or 12,452) of these observations involved the payment of a dividend. In contrast, approximately 30% (or 25,429) of the 85,547 observations for firms without a bond rating paid a dividend. This evidence strongly suggests the dividend decision is closely related to the bond rating. They chose to scale dividends by both EBIT and net income to avoid the influence of extra-ordinary items. For the entire sample, the average overall payout was 10.2% and the regular payout 26.1%, with medians of 0% for both indicating the skewed nature of dividend payments.

The results show that the probability of a firm paying dividend increases with its profitability and decreases with its M/B ratio and with its debt ratio with the coefficient on the investment rate being insignificant. One of their research models suggests that more profitable firms with high debt ratios have bond ratings. The other shows that high debt ratio reduced the probability of a firm paying a dividend. Neither the investment rate nor the M/B ratio is significant in either model. The coefficient on debt remains significantly positive, while the size of the profitability coefficient is reduced substantially, and the coefficient on this variable is no longer significant. It is clear that larger firms with more debt seek out public markets, while the importance of profitability, investment rates, M/B ratio, and asset tangibility are less important. The results above indicate that the debt and dividend decisions are affected by similar underlying firm characteristics and that type of debt matters. They also estimate directly the factors that influence the probability of a firm having a bond rating, and find that this probability is strongly associated with the same set of fundamental factors that influence the likelihood of paying a dividend, and that public market access proxies (size and asset tangibility) are the most important.

Aivazian et al. also offer several insights in their research. Since they know that size is important in both the public market access decision and the dividend decision, it is not surprising that the proportion of firms with a bond rating increases with size. Their study indicates that dividend smoothing is apparent across almost all size quintiles. The extent of dividend smoothing depends on whether a firm has a bond rating. In contrast, there is strong evidence that firms with bond ratings smooth their dividends since their dividends are adjusted much more slowly in response to current earnings. It is consistent with their prediction that firms with bond ratings smooth their dividends as part of a strategy to maintain access to public bond markets.

Table 4 Lintner Model Regression Estimates

Lintner Model Regression Estimates

The dividend per share at time t (DPS_t) is regressed against the lagged dividend and earnings per share with and without an interaction indicator variable constructed as the rating indicator variable times the lagged dividend. For each regression, the first is over all observations including zero dividend observations and the second over positive dividend payments only. In each case, the first row is the coefficient on the independent variable and the second the t-statistic. Time period is 1981–1999 for all observations and 1985–1999 for the subset with bond ratings. The adjusted R^2 is the overall R^2 not that estimated from the fixed effects model; as such it is a simple squared correlation coefficient and does not represent the explained variance. The significance of the interaction terms is given by the t-statistic. ** (*) indicates significance at the 1% (5%) level.

	No. of Obs.	Constant	DPS_{t-1}	EPS_t	DPS Rating Interaction	EPS Rating Interaction	Optimal Payout	Adj. R^2 (%)
Total sample (1981–1999)	127,516	14.55	0.894	0.138				81.4
		1.18	12.29**	3.95**			> 100%	
	46,707	13.86	0.892	0.176				87.9
		20.22**	10.68**	3.05**				
SIC & year indicators	127,516	40.69	0.894	0.138				81.4
		0.35	12.30**	3.95**			> 100%	
	46,706	38.79	0.892	0.176				87.9
		0.01	10.69**	3.05**				
Fixed effects: firm indicators	127,516		0.761	0.120			50.2%	81.4
			306.10**	108.29**				
	46,707		0.839	0.160			99.0%	87.9
			232.30**	88.18**				
Fixed effects & autoregression (FE&A)	110,092	131.07	0.619	0.124			31.0%	82.4
		6.13**	204.08**	104.19**				
	40,234	301.79	0.678	0.161			50.0%	88.3
		6.14**	133.22**	82.29**				
Rated DPS interaction (FE&A)	110,092	153.9	−0.136	0.117	0.850		40.9%	74.0
		7.93**	−20.61**	108.83**	131.77**			
	40,234	349.1	−0.031	0.154	0.784		62.3%	82.9
		7.84**	−3.02**	86.61**	83.11**			
Rated DPS & EPS interaction (FE&A)	110,092	159.2	−0.316	0.248	1.064	−0.168	32.1%	74.8
		8.46**	−43.89**	117.99**	152.68**	−71.58**		
	40,234	384.6	−0.238	0.265	1.010	−0.156	48.0%	82.2
		8.86**	−21.35**	85.14**	95.18**	−42.50**		

Table 5 Size and Lintner Model Regression Estimates

Size and Lintner Model Regression Estimates

The dividend per share at time t (DPS_t) is regressed against the lagged dividend and earnings per share with and without the interaction variable. All models are estimated as fixed effects with first order autoregression correction (FE & AR). The models are estimated over positive dividend observations only for five quintiles based on total assets, with TA1 the smallest to TA5 the largest quintile. For each regression, the first row is the coefficient on the independent variable and the second the t-statistic. Note in the autoregression correction one observation for each firm is dropped since larger firms tend to have more time-series observations. The effective sample size of the total asset quintiles increases with size. ** (*) indicates significance at the 1% (5%) level.

			FE & AR		FE & AR with Interaction			
	No. of Obs.	% Rated	DPS_{t-1}	EPS_t	DPS_{t-1}	EPS_t	DPS Rating Interaction	EPS Rating Interaction
Overall sample	40,223	25.0	0.677 133.2**	0.161 82.29**	−0.238 −21.35**	0.265 85.14**	1.016 95.18**	−0.156 42.56**
TA1	6,795	0.3	0.134 27.4**	0.817 109.6**	0.133 27.5**	0.817 109.6**	0.479 0.30	−0.370 −0.27
TA2	7,064	4.7	−0.073 −10.37**	−0.000 −0.05	−0.072 −12.29**	0.697 52.61**	0.092 6.75**	−0.699 −52.80**
TA3	7,248	19.8	−0.306 −26.98**	0.493 30.69**	−0.330 −27.65**	0.604 25.94**	0.627 7.49**	−0.197 −6.67**
TA4	7,708	41.0	0.145 16.47**	0.525 47.20**	0.223 17.52**	0.632 34.24**	−0.296 −17.59**	−0.138 −6.87**
TA5	8,498	60.4	0.741 69.20**	0.161 40.68**	−0.419 −16.19**	0.279 44.74**	1.178 49.08**	−0.182 −24.43**

Two tables above are quoted from Aivazian et al (2006, p 448 and p 451) to show their research using Lintner's model and additional variable which is size.

Easterbrook (1984) mentioned that prosperous firms may withhold dividends because internal financing is cheaper than issuing dividends and floating new securities. Worse, dividends do not distinguish well-managed, prospering firms from others. Someone who observes an increase in the dividend has no very good way to tell whether this signals good times or bad. Doubtless, only a prospering firm can continue to pay dividends year in and year out, but a firm with a long record of prosperity also would not need the verification available from the dividend signal.

As quoted from Jensen and Meckling's journal of "Theory of the Firm: Managerial Behavior, Agency Costs, and Capital Structure", managers, investors, and other participants will find it advantageous to set up devices, including monitoring, bonding, and ex post readjustment that give managers the incentive to act as better

agents. The costs of monitoring, bonding, and the residual losses from slippage are agency costs borne by investors. One form of agency cost is the cost of monitoring of managers. The second source of agency costs is risk aversion on the part of managers. Managers can change the risk of the firm not only by altering its mixed of projects, but also by altering its debt-equity ratio. The lower the ratio means the lower the chance of bankruptcy of the firm. Given the existence of debt, managers can control the amount of risk. One way they can do this is by picking a dividend policy. If managers first issue debt and then finance new projects out of retained earnings, the debt-equity ratio will fall. Financing projects out of retained earnings - if unanticipated by bondholders - transfers wealth from shareholders to debt holders. Just as bondholders want to limit dividends, to prevent advantage-taking by shareholders once a rate of interest has been set, so shareholders want to increase dividends to the extent possible in order to avoid being taken advantage of by bondholders. Dividends set in motion mechanism that reduce the agency costs of management and that prevent one group of investors from gaining relative to another, by changes in the firm's fortunes after financial instruments have been issued. Nothing here suggests that repurchases of shares would not do as well as or better than dividends. The issuance of debt instruments in series, so that payments and re-financings are continuous, serves the same function as dividends. Easterbrook's journal is a small step toward understanding whether, and how, dividends may be useful in reducing the agency costs of management. He suggests that dividends may keep firms in the capital market where monitoring of managers is available at the lower cost, and may be useful in adjusting the level of risk taken by managers and the

different classes of investors. Such an explanation offers a hope of understanding why firms simultaneously pay out dividends and raise new funds in the capital markets.

The capital structure of a firm is composed of equity and debt. The pay out of dividends to the equity holders devalues a firm's debt since it increases its probability of default. According to Wise, Lee and Bhansali (2004), at the time they write their journal, many corporations are not issuing dividends to their stock holders or issuing a very small dividend. This is partly a consequence of the emphasis that stock holders put on growth over income in the late 1990s. One anticipates, with the stock bubble of the late 1990s having passed and the dividend yield for the S&P 500 well below its historical average, that in the future many corporations that do not presently pay dividends will begin to do so and many corporations that presently only pay a very small dividend will increase their dividend yield. Recently at the time the journal is written, Microsoft has started to issue a small dividend. The amount totaled $32.6 billion considering over 10 billion shares outstanding Microsoft had (it contributes 15 percent of all dividends paid by 500 largest companies for the year). Furthermore, the portion of the US population that is retired or nearing retirement is increasing and these investors are likely to put a greater emphasis on income over growth providing an additional incentive for corporations to increase dividend yields.

Firm value V is the sum of the value of a company's stock S and debt B. As quoted in Wise, Lee and Bhansali's journal, Modigliani-Miller theorem says that the return on a portfolio invested in the firm value is unaffected by a company's decision to start to issue dividends or increase its dividend yield. This dividend induced negative drift in value's evolution increases the firm's default probability and hence

reduces the present value of its corporate bonds. Consequently corporate bond holders have risk associated with the possibility that at some time in the future companies that currently do not pay dividends will start to and that companies that currently issue a very small dividend will increase their dividend yield.

Suppose that a company starts paying dividends at some time t_d in the future at a constant yield q, or at the time t_d increase its dividend yield by q. This will decrease the value of its bond and so Wise, Lee and Bhansali introduce the notion of dividend duration $D(t_d) = -(1/B_0)dB_0/dq$, where B_0 is the present value of the corporate debt. The dividend duration determines how the present value of corporate debt depends on q. They also find that the default probability $P_D(t)$ for a company depends on its future dividend payments. Using a first passage structural default model they derive a formula for $D_P(t_d,t) = (1/P_D(t))dP_D(t)/dq$ and estimate its value for some US corporations. They are assuming that dividend payments are financed out of operating profits or cash reserves and not out of the issuance of new debt or stock. The payment of dividends to the stock holders gives rise to a negative contribution to the firm drift that has nontrivial dependence on V and t. If default occurs at time t (which is prior to the debt's maturity), the stock holders receive nothing and bond holders receive V_d. This form for V_d could arise from a covenant the firm has with its debt holders which forces the firm into bankruptcy to ensure that the debt holders do not lose more than a fixed fraction of the present value of the debt (valued under the assumption that the firm does not default) at any time t.

Wise, Lee and Bhansali conclude that corporate bond holders face many sources of uncertainty and this makes the pricing of corporate bonds and risk management of portfolio of corporate bonds particularly difficult and interesting.