Chapter III

LEITRATURE REVIEW
CHAPTER 3
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3.0 Empirical studies of the signaling hypothesis

3.1 From theory to empirics

The signaling hypothesis is based on the notion of asymmetric information particularly between managers and investors. Under this assumption dividend changes are valuable in that they convey information about the firm’s prospects. Indeed, Lintner (1956) observes that managers are more willing to raise rather than reduce dividend levels, and this has been widely interpreted as indicating that dividend decreases are associated with negative signals while dividend increases signal positive news. But what precisely is the nature of the information contained in dividend changes?

The risk-information hypothesis claims that dividend increases signal risk reduction. Alternatively, according to the cash flow signaling hypothesis, dividend changes contain information about future cash flows. Another opinion is that dividend changes signal permanent shifts in current earnings. In any event, as noted by Allen and Michaely (1995), regardless of the precise information contained in the dividend signal, there are principally two conditions that have to be met in order for the signaling hypothesis to be valid.

The first condition requires that market participants understand dividends as signals. For example, if the unexpected dividend change signals future earnings changes, then market participants should revise their future earnings forecasts following the dividend
announcement. More generally, if unexpected dividend changes are interpreted as signals of new developments in the firm’s prospects, then a price reaction should be observed in the same direction as the unexpected dividend change announced. The second condition is that the dividend change is followed by a change in the same direction in earnings or other firm’s characteristics that the dividend changes is assumed to predict. Empirical methods in studies of the signaling hypothesis have therefore focused on assessing the extent to which these conditions are met.

The empirical reviews these two conditions in turn. It begins with studies that are concerned with assessing market interpretation of the dividend as a signal. This first condition is commonly tested by eventual studies around the dividend declaration period and by studying analysts’ earnings forecasts revisions. The validity of the second condition is then assessed, by reviewing evidences from empirical studies about actual changes in firm’s characteristics following dividend declarations carrying change in percentage.

Finally, some empirical studies of the conditional signaling hypothesis are produced. The conditional signaling hypothesis proposes that the dividend signal is conditional on firm specific characteristics. This implies that both the interpretation of the dividend signal, and actual long-term changes in the firm following the signal, are conditional on firm characteristics. Thus empirical evidence on the conditional signaling hypothesis looks at cross sectional variations in the immediate reaction to dividend announcements. It further looks at variations in long term changes in performance and other characteristics following dividend changes. These cross sectional variations are tested either by comparison analysis or by regression
analys

3.2 Interpretation of the dividend signal

Interpretation of the dividend signal is typically assessed by event studies around the dividend change announcement period as has been done by numerous papers. However, Laux, Starks and Yoon (1998) and Howe and Shen (1998) innovated price reaction of competitive firms that announce dividend changes. Both these studies use US firms and define the event window as the two days including the day of the dividend change announcement and the previous day. Both also utilize the market model, estimated post event, to generate abnormal returns.

Laux, Starks and Yoon (1998) study dividend declarations in the period 1969-1988, but restrict observations to dividend changes of at least 25%. They calculate the averages of the cumulative two-day abnormal returns across the sub samples of firms declaring dividend increases and firms declaring reductions. Consistent with the signaling hypothesis, it is found that firms experience significant abnormal reactions at the time of the announcement and in the same direction. Particularly, the mean two-day abnormal reaction of the 217 firms declaring dividend increases is significant at 1.01%. In contrast, the average abnormal reaction of the 105 firms announcing dividend slashes is significant at −6.35 percent. Further, the findings that the reaction to dividend reductions is stronger than for dividend increases confirm Linter's (1956) observation of managers' particular dislike for dividend cutoffs.

Laux, Starks and Yoon (1998) also try to determine the information that market participants perceive to be contained in the
dividend change announcements. They do this by looking at the price reaction of non-announcing firms to dividend change announcements by firms in the same industry. Specifically, it is proposed that rivals' price reaction should be of the same direction as that of the announcing firm if the dividend change announcement is interpreted as indicating information spread in industry (known as contagion effect). In contrast, if the announcement is interpreted as signaling a shift in the rivalry position of the announcer then the price reaction of rivals should be in the opposite direction (competition effects). The two-day average abnormal return, for 1,243 firms, rivals to dividend-increasing firms, is recorded at 0.05 % while for 667 firms, rivals to dividend-decreasing firms, the corresponding figure is –0.32 %. As the price reaction of rivals is in the same direction as that of the announcer, this indicates that announcements are interpreted as containing information about common factors for the industry as a whole.

However, Laux, Starks and Yoon (1998) note that announcements of dividend change may contain information about shifts in the competitive balance in the industry. First, the average reactions of competitive firms to dividend change announcements are not significant, which may be the result of contagion and competition effects offsetting each other. Second, it is found that rivals' same-direction reactions are strongest for those competitors' least likely to be affected by changes in the competitive position of the announcer firm. Specifically, the most competitive firm displays a significant positive reaction to increase announcements while the least competitive firms display a significant negative reaction to slashing declarations.

Howe and Shen (1998) also investigate market’s interpretation of the nature of the dividend signal by studying non-announcing rivals. The samples used in the study consist of rivals of dividend initiating
firms traded on the NYSE/AMEX, in the period 1968 to 1992. The price reaction and analysts' forecast earnings revisions, following dividend initiation announcements by rival firms in the same industry, are analyzed. The average announcement period’s two-day cumulative abnormal price reaction of 3540 rivals is recorded as insignificant at –0.07 percent. Similarly analysts do not revise their earnings forecasts for rivals of announcing firms. The mean and unadjusted earnings forecast revision across 345 rivals of dividend initiating firms is insignificant at 0.1677, while the mean abnormal forecast revision is insignificant at 0.1671. Thus the findings in Howe and Shen (1998) are not fully consistent with those in Laux, Starks and Yoon (1998). Particularly, while Laux, Starks and Yoon (1998) show that dividend change announcements signal information about rivals of the announcers, Howe and Shen (1998) do not support this view. However, evidence in Laux, Starks and Yoon (1998) supports the validity of the first condition for the signaling hypothesis to hold, namely that dividend changes are interpreted as signals. As the first condition is shown to be valid, the question is whether the second condition is also met. Particularly for the second condition to be valid, the dividend change announcement should be followed by actual changes in the firm characteristics, which the dividend change is predicted to signal.

3.3 Actual changes following the dividend change announcements

Assessing actual changes in firms’ characteristics, following dividend change announcements is the subject of various empirical studies. This is because the findings that dividend change announcements are followed by particular changes in the firm may help in establishing two things. Primarily, it confirms the validity of the signaling hypothesis because it makes sense to interpret the dividend
change as a signal of an unexpected change if indeed it is followed by such a change. Second, it can shed light on the precise nature of the information contained in the announcement.

DeAngelo DeAngelo and Skinner (1996) investigate whether dividend change announcements are followed by changes in earnings that are in the same direction. In order to isolate the effects of the signaling hypothesis from other effects that may influence firms' dividend policy, DeAngelo DeAngelo and Skinner (1996) select firms experiencing a sudden earnings decline after a long period of stable growth. In particular, the sample contains 145 US firms experiencing a decline in annual earnings between 1980 and 1987 after consistent earnings growth over at least nine years. This selection method ensures that the dividend change is a signal of future rather than past changes. The selection method also implies greater need for signaling because firms that expect the current decline to be corrected in the near future have to convey this information to market participants.

The initial results in DeAngelo DeAngelo and Skinner (1996) do not support the signaling hypothesis of dividends, as there is no indication that dividend increases represent reliable signals that the current earning problem is only for a shorter period of time. Specifically, it is found that the 99 firms that increased their dividends in the first year of the earnings decline experienced no positive abnormal earnings in the subsequent three years. To further investigate the robustness of these results, DeAngelo DeAngelo and Skinner (1996) use 135 firms with complete earnings data and regress the abnormal future earnings on a dividend signal and a number of control variables assumed to help in predicting future earnings. They find the coefficient on the dividend signal to be insignificantly different
from zero and this result holds when alternative proxies used as dividend signal. Thus the results from the regression analysis confirm the earlier findings that dividend increases are not a reliable signal of improved future earnings performance.

Two possible explanations are offered in DeAngelo and Skinner (1996) for the unreliability of the dividend signal. The first is managers’ tendency to send over-optimistic signals either naively or deliberately. Second, it is suggested that the cash commitment associated with the dividend increase is relatively small. The median firm’s dividend increase in the year of the earnings decline, amounts to only 3.5 percent of earnings, hence weaker firms can afford to send misleading signals.

A similar figure of Lipson, Maquieira and Meggison (1998) compare the performance of 99 newly public US firms that initiated dividends in the period 1980 to 1986, with similar firms that did not. The argument for the choice of newly listed firms is similar to that of DeAngelo and Skinner (1996) for choosing firms experiencing earnings decline after a long period of earnings growth. Specifically, it is noted that the need for signaling as a way of distinguishing quality may be more important for these firms. Indeed, it is found that earnings surprises in the first and second years following dividend initiations are significantly greater compared with similar newly listed firms that did not initiate dividends. Furthermore, the dividend cash commitment represents about 5 percent of earnings of the newly listed firms that initiated dividends. This is significantly lower than 8.5% of earnings that similar non-initiating firms would have had to commit to, if they wanted to match the dividend yield, dividend to sales ratio or dividend to assets ratio of initiating firms.
Thus, Lipson, Maquieira and Meggison (1998) provide support for the view that dividend initiations signal future earnings prospects, as they distinguish one newly listed public firm from other newly listed firms. However, it is also shown that dividend initiations do not distinguish newly listed firms from established firms in the same industry. This provides partial support for the signaling theory and for the second condition, namely that the dividend changes are followed by actual changes in the firm’s characteristics. It is, however, inconsistent with DeAngelo and Skinner (1996), as is the conclusion that dividend initiations are a valid signal of future performance, because weaker firms would find the implied resource commitment, required in order matching the actions of quality firms, too costly to mimic. Thus more evidence is needed on the question of whether dividend changes are a reliable signal, and this is provided in Benartzi, Michaely and Thaler (1997).

Benartzi, Michaely and Thaler (1997) take an empirical approach similar to DeAngelo and Skinner (1996), comparing the unexpected earnings of firms that changed their dividends with those that did not. The sample contains 7186 firm-year observations of 1025 US firms that trade on the NYSE or the AMEX for at least two years during the period 1979 to 1991 and which meet various other requirements. The hypothesis is that firms that increase their dividends in a given year should enjoy positive unexpected earnings in years that follow. Similarly, firms that decrease their dividends in a given year should experience negative unexpected earnings in years that follow. Benartzi, Michaely and Thaler (1997) also investigate variation in the unexpected earnings across dividends increasing firms. The hypothesis is that if signaling is costly, then the larger the dividend-increase, the greater should the unexpected
earnings in the following year be.

Results in Benartzi, Michaely and Thaler (1997) show a strong contemporaneous correlation between dividend changes and earnings changes. Firms that increase their dividends in year 0, experience earnings increases in that year, which are significantly higher than the mean earnings change of the group of firms that did not change their dividends. Similarly, firms reducing their dividends, experience significantly more severe earnings decreases in the same year compared with the group of firms that did not change their dividends. However contrary to the signaling hypothesis no correlation is found between the sign and size of dividend increases in a given year and earnings changes in future years. Furthermore firms that cut dividends in a given year, experience significant earnings increases in the following year.

Thus the results in Benartzi, Michaely and Thaler (1997) are supportive of DeAngelo DeAngelo and Skinner (1996), as they also reject the link between dividend changes and unexpected future earnings growth. This rejection of the traditional interpretation of the signaling hypothesis is also the conclusion in Jensen and Johnson (1995). However, what set Jensen and Johnson (1995) apart from these studies is that they concentrate specifically on dividend decrease announcements rather than on dividend changes. The study investigates whether firms reducing dividend by at least 20 percent after twelve consecutive quarters of positive, non-decreasing dividends, also experience a decline in earnings.

The sample in Jensen and Johnson (1995) consists of 268 observations of 218 reductions and 50 omissions by 242 different US
firms in the period 1974 to 1989. It is found that while earnings decline significantly in the period before the dividend cut they raise significantly afterwards. The stock price, however, is found to drop at the time of the dividend cutoff announcement and this is explained by the observation that although the cut marks a turning point in earnings pattern, there are still lingering problems. It is observed that the earnings level at the end of the second year after the dividend cut is still below its level three years before the cut. The study thus proceeds to assess the nature of the problem more closely.

To further investigate the precise information the reduction announcements contain, Jensen and Johnson (1995) look at a range of changes in various other firm’s financial variables. The patterns of these variables over the three years before and three years after a dividend reduction are examined. Findings indicate that firms use the funds, saved from the dividend cut, to improve their positions. The dividend cuts thus lead to improvements in liquidity position and to reduction in the level of debt. The conclusion is that dividend reductions do not necessarily signal a decline in earnings. Rather such cuts appear to signal the beginning of restructuring activities and a turnaround in financial decline.

Thus the implications of Jensen and Johnson (1995) are similar to those of Lipson, Maquieira and Meggison (1998) in the sense that both provide some evidence to support the notion that dividend changes are followed by actual changes in the firm. However, both also illustrate that dividend changes should not be simply interpreted as signaling future earnings increases or decreases. Furthermore, such a blanket view on the nature of the dividend signal is strongly rejected in DeAngelo DeAngelo and Skinner (1996), and in Benartzi,
Michaely and Thaler (1997). Results from these studies clearly call for further investigation into the precise nature of the information contained in dividend change announcements. Alternative hypotheses, which have been put forward, include the permanent earnings hypothesis, the cash flow hypothesis and the risk information hypothesis. Some of the relevant empirical work in these areas was conducted in later years as it is a never ending story.

3.4.1 Permanent earnings, cash flow and risk information hypotheses of dividends

The permanent earnings hypothesis proposes that the changes in dividends need not necessarily signal future growth or contraction in the levels of current earnings. Instead, announcements of dividend changes contained information about permanent as oppose to a temporary shifts in current earnings. This view is consistent with the survey findings by Lintner (1956) and with Lee (1996) who finds that the partial adjustment model performs far better when the target dividend is expressed as a function of permanent earnings.

Lintner (1956) finds that mangers tend to smooth dividends, and this tendency is reflected in the partial adjustment model. Indeed, the model can be manipulated so as to express dividends in terms of a weighted-average of current and past earnings. Thus according to this model, dividend trends reflect the smoothed pattern of current earnings, eliminating transitory fluctuations. A signaling theory interpretation of this is that by smoothing out temporary fluctuations in the factors that determine dividends, the dividend pattern reflects the stable pattern of those factors. As it is current year’s earnings, which determine dividend levels in the
partial adjustment model, a dividend change has to be the result of a permanent shift in current earnings.

The second part of Benartzi, Michaely and Thaler (1997) examined the hypothesis that dividend changes signal earnings stability rather than future earnings growth. The study compares the likelihood of a dividend-increasing firm experiencing a decline in its following year’s earnings with the probability of a firm that does not change its dividends to experience such an event. The results indicate that compared with firms that maintain their dividend levels; dividend-increasing firms are less likely to experience unexpected declines in earnings at least in the first year after the dividend change. As no correlation is found between dividend increases and future earnings changes, the conclusion arrived at is that dividends do not signal increases in unexpected future earnings. Instead, it is concluded that, consistent with Lintner (1956), dividend increases signal that current earnings levels are permanent.

This distinction between permanent and temporary changes is also explored in Brook, Charlton, and Hendershott (1998). That study, however, is based on the hypothesis that dividend changes contain information about cash flow rather than about earnings. This is the cash flow signaling hypothesis, which proposes that dividend changes signal changes in expected cash flows.

Brook, Charlton, and Hendershott (1998) investigate this hypothesis and in particular whether dividend changes signal permanent as opposed to temporary changes in firms’ cash flows. For that purpose a sample of non-regulated, US firms is divided into three groups on the basis of expectations regarding changes in cash
flows in years 1 through 4 where 1992 is year 0. Classification into groups is then carried out as follows. The first group, the permanent-increase group, contains 101 firms whose cash flows remain at least 30% above year 0 in each of the subsequent four years. The second group, the temporary-increase group, contains 45 firms whose cash flows increase by at least 40% in year 1 but then fall to less than 20% above year 0 levels in either of the subsequent two years. The third group, the no-increase group, consists of 34 firms whose cash flows increase by less than 30% over the four-year period and by less than 15% in each year.

Results from the comparison analysis in Brook, Charlton, and Hendershott (1998) are consistent with the notion that firms use dividends to signal a permanent increase in cash inflows. Specifically, it is reported that the permanent-increase group’s average dividend per share changed by 16.5 percent in year 0 (initial year), before the cash flow increase. This is significantly larger than the 6.8 percent change experienced by the temporary-increase group. Furthermore, comparing annual abnormal stock returns, across the three groups, indicates that the dividend signal is understood by market participants. The permanent-increase group experiences an average annual stock return, net of the CRSP value-weighted index, of 17.5 percent in year 0. This is statistically different from zero, and statistically different from the 6.5 percent experienced by the temporary-increase group.

Thus consistent with the cash flow signaling hypothesis, Brook, Charlton, and Hendershott (1998) find a positive link between increases in permanent cash flows, dividend rises and stock price reaction. Firms expecting a permanent improvement in their cash
flows, signal this information by increasing their dividends. The market understands the signals and the stock price rise before the actual cash flow increase occurs.

Thus while Benartzi, Michaely and Thaler (1997) suggest that dividend changes signal changes in permanent earnings, Brook, Charlton, and Hendershott (1998) find it is permanent cash flows that dividend changes signal. In both cases, however, dividends are used to signal changes in the pattern of long-term performance. An alternative explanation is that dividend changes signal information about changes in the firm’s risk. This is the risk information hypothesis, which is investigated in Dyl and Weigand (1998). In particular, Dyl and Weigand (1998) distinguish the risk information effect by investigating whether dividend initiation announcements are followed by reduction in earnings volatility and risk or by earnings increases.

The sample in Dyl and Weigand (1998) consists of 240 firms listed on the NYSE/AMEX, and which initiated dividends during the period 1972 to 1993. In order to assess the change in risk following dividend initiations, the total risk of returns, market risk of returns and earnings-per-share volatility, before and after the dividend initiation, are compared. Thus proxies for these variables are calculated for each firm in respect of the period before the dividend initiation and in respect of the period after the initiation. The means and medians for each of these proxies are obtained and the significance of the change from the pre-initiation period to the post-initiation period is assessed.

Dyl and Weigand (1998) find that 70 percent of the sample
firms have lower variances in the post dividend initiation period. Furthermore, the hypothesis of equal mean variances before and after the dividend initiation is rejected. Likewise, 68 percent of the sample firms have lower market risk as measured by $\beta$ after the dividend initiation and the difference in the mean $\beta$ pre and post initiation is statistically significant. There is also evidence to show that earnings volatility declines in the period following the dividend announcement, as the post-initiation earnings volatility is significantly lower compared with the pre-initiation period. In contrast, however, there is no significant difference in the mean of the standardized earnings per share in the pre- and post-initiation periods. Thus, it appears that announcements of dividend initiations are not followed by increases in future profitability.

From the discussion in this sub section it emerges that the nature of the information, conveyed from the dividend change announcement, is ambiguous. The studies by Benartzi, Michaely and Thaler (1997) and Brook, Charlton, and Hendershott (1998) conclude that dividend signal shifts in permanent as opposed to transitory performance. Although the emphasis in the former study is on earnings performance while in the latter it is cash flow, over the long-term these are essentially the same. These conclusions mix well with Lintner’s (1956) observation that managers seek to achieve a gradual upward progression in dividends that reflect long-term, permanent changes in performance. In contrast, Dyl and Weigand (1998) find that dividend changes indicate shifts in risk and earnings volatility rather than changes in performance earnings following dividend initiation announcements. However, while Lipson, Maquieira and Meggison (1998) find some support for the notion that dividend initiations signal future earnings surprises, Dyl and
Weigand (1998) find that the dividend initiations do not mark a significant change in profitability.

A possible resolution for this confusion is the idea that dividend changes convey different information to different firms. The reaction to dividend-change announcements therefore depends on particular characteristics of the announcing firm and its circumstances. This hypothesis is termed the conditional signaling hypothesis and is typically investigated by cross sectional comparisons, or by regression analysis where firm characteristics are entered as explanatory variables.

**3.4.2 The conditional signaling hypothesis**

Some Researchers have investigated three main factors that may cause variations in the signaling function of dividends across firms or even over time for the same firm. First, such variations may be due to the combination of activities with which the firm engages prior to the dividend change announcement. Second, variations in the meaning and interpretation of the dividend signal may be caused by differences in the environment in which the firm operates. Third, cross sectional differences in the meaning of the dividend signal may be the result of differences in firms’ characteristics. The discussion that follows presents some of the empirical work on each of these three factors, namely, prior activities, the environment and firm’s characteristics separate factors is somewhat artificial. For instance, Tobin’s related to the first factor, the effect of prior activities on the dividend signal is the idea that the value of the dividend signal depends on the surprise with which it is met by market participants. For example, a dividend change announcement that comes after certain activities, such as
the publication of earnings data, may be less informative than if such prior activity did not occur. Similarly, a dividend change announcement that follows a particular activity may contain different information than if it came after a different activity. The first issue is dealt with in Balachandran, Cadle and Theobald (1999), while the second issue is the subject of Born and Rimbey (1993).

Born and Rimbey (1993) argue that financing activity, undertaken prior to dividend increment declarations, can distinguish dividend increasing firms with future growth prospects from those firms that disinvest. The study investigates this hypothesis by regression analysis methodology of the price reactions to surprise dividend increase announcements. To ensure only surprise and hence informative increases, enter the sample, the selection procedure imposes the restriction that only firms initiating or resuming dividends after at least ten years of omissions are included. This selection Q is generally defined as the ratio of the market value of the firm’s debt and equity to its total assets, and in that sense it is a firm’s characteristic. However, to the extent that Tobin’s Q represents investment opportunities, it can also be viewed as an environmental factor. In the discussion that follows, Tobin’s Q is treated as a firm’s characteristic. The second caveat is with reference to the limited coverage of the review. For example, variation in the signaling function of dividends that are due to stock ownership patterns is not discussed. Yet DeAngelo and Skinner (2000) provide some empirical support for the notion that the long-term decline in special dividends is related to ownership patterns and in particular to the shift from individual investors to institutional domination.
Born and Rimbey (1993) begins their empirical investigation by running separate regressions for each sub sample, of the reaction to the dividend increase announcement on a constant and the dividend yield. Results indicate that the intercept is lower for the sub sample of prior-financing firms compared with the sub sample of non-financing firms. This is consistent with the notion that prior financing activity leads to partial anticipation of a dividend increase, which impacts the share price prior to the actual increase announcement. Results also show that for the sub sample of prior-financing firms, the abnormal return per unit of dividend yield is much larger than for the non-financing firms. (2.800 As oppose to 1.745). This is consistent with the indication that prior financing activity alters market reaction to dividend increase announcements as it is. Based on these results Born and Rimbey (1993) proceed to assess the effect of the size of the prior financing activity on the reaction to the dividend announcement. Utilizing the sub sample of prior-financing firms only, the price reaction to the dividend announcement is regressed on the dividend yield and on the financing yield. The estimated coefficient on the financing yield is shown to be positive and significant. This is taken to indicate that the larger the amount of finance, raised prior to the dividend increase announcement, the stronger is the positive price reaction to the announcement. Thus Born and Rimbey (1993) conclude that a dividend increase announcement that follows prior financing activity is interpreted as a stronger indication of growth compared with announcements that do not follow such activity. However, the prior activity also reveals information and results in anticipation of a dividend change. Therefore the actual dividend change announcement has less informative value. This last point is further taken in Balachandran, Cadle and Theobald (1999), who also
investigate the effects of prior activities (albeit not financing) on the dividend signaling function.

By testing the traditional signaling hypothesis assumption consistent with which the IDR announcements should lead to negative price reactions. Indeed, the unadjusted mean abnormal return in the event window around the IDR announcement is found to be negative and significantly different from zero across the five return generating processes.

In the next stage of such investigation, Balachandran, Cadle and Theobald (1999) look at differences in price reaction between IDR that follow previous dividend reductions and IDR that do not. To do this the sample of IDR announcements is divided into 142 First Interim Dividend Reductions (FIDR) and 100 Subsequent Interim Dividend Reductions (SIDR). The hypothesis put forward is that FIDR lead to more negative.

Balachandran, Cadle and Theobald (1999) redefine FIDR as IDR announcements, where there were no dividend reductions in the three years preceding the IDR.

In the third stage of the investigation, Balachandran, Cadle and Theobald (1999) focus on SIDR announcements. It is proposed that when the subsequent interim dividend reduction is greater than the Prior Final Dividend Reduction (PFDR), the price reaction should be stronger compared with when the SIDR is less than the PFDR. This may be the case if the increased dividend reduction at the interim stage provide further information and is tested by splitting the SIDR sample into two groups. The first group consists of 39 SIDR where the percentage dividend reduction is greater than
the percentage PFDR, and the second group consists of 61 SIDR where the percentage dividend reduction is less or equal to the percentage PFDR. Using the market model in the final stage of the investigation, Balachandran, Cadle and Theobald (1999) search for factors that could explain cross sectional differences in price reactions to IDR. For this purpose, the cumulative abnormal returns around the IDR, generated from the market model, is regressed on various variables that are hypothesized to impact the surprise in the IDR. Results indicate that, consistent with signaling hypothesis, the price reaction to the IDR is significantly related to the size of the reduction. Furthermore, there are mixed results about the importance of changes in interim earnings in influencing price reaction. This is consistent with the view that the dividend signal is valuable because the information in the earnings change is a noisy signal of future performance. The regression results also support the conditional signaling hypothesis and the notion that cross sectional differences may result in variations in the signaling function of dividends. Particularly, the price reaction is significantly influenced by whether the firm has previously reduced its dividends and by the gearing ratio. The environment in which the firm operates also appears important as the surprise in the IDR and thus the price reaction to it, are influenced by prior dividend reductions by other firms in the industry.

The impact of the imperfect environment in which the firm operates on market Results in Impson (1997) indicate that regulated utilities experience significantly more severe reaction to dividend reduction announcements compared with unregulated firms. It is suggested that the surprise in the dividend reduction announcements may be greater for regulated utilities as these firms
have traditionally been associated with high dividends. Indeed, it is found that firms tend to experience a favourable share price performance, over the longer term, following dividend initiations and unfavourable performance following omissions.

3.4.3 Research work for four decades

To assess cross sectional variations in long-term price performance following dividend initiations and omissions Akhigbe and Madura (1996) regress the 36-month cumulative abnormal return on firm characteristics and the size of the dividend change. Results of this procedure indicate that larger cuts in dividends are associated with more severe long-term price performance. Further, the coefficient on the past profitability measure is negative and significant in the initiation sample, suggesting that firms with inefficient management improve their performance following dividend initiations. With regards firm size it is found that smaller firms tend to perform significantly better in the three years following dividend initiations while large firms tend to perform significantly worse following dividend omissions. Finally, long term reaction to dividend initiations is influenced by the Tobin’s Q measure, implying that firms that over-invest perform significantly better following dividend initiations. These findings are consistent with the conditional signaling hypothesis and with the findings in Gombola and Liu (1999)

Gombola and Liu (1999) explore the link between Tobin’s Q and the short-term price reaction to dividend increase announcements. In particular, the study analyses the price reaction to 196 Special Designated Dividend announcements made by US firms between 1977 and 1989. It is hypothesized that firms facing
low investment opportunities, with low Tobin’s Q, should experience stronger price reaction to the announcement of Special Designated Dividend. This is consistent with the signaling hypothesis, because the surprise in the special dividend announcement should be greater for firms with little investment opportunities. Indeed the event study methodology finds that the mean three-day cumulative abnormal return around the Special Designated Dividend announcement for the low Tobin’s Q sample is positive and significant. However, the mean price reaction for the high Tobin’s Q sample is insignificantly different from zero, while the mean difference between the two groups is significant.

The approach in Gombola and Liu (1999) is based on an earlier study by Lang and Litzenberger (1989). Both studies investigate the validity of the conditional signaling hypothesis with respect to Tobin’s Q, but while the former focuses on price reaction to special dividend, the focus of the latter in on substantial changes in regular dividends. According to the conditional signaling hypothesis the reaction to substantial dividend change announcements should be larger for firms with low investment opportunities. The rationale for this is explained as follows. Investors expect an increase in cash flows for firms with good investment opportunities and they also expect these firms to announce dividend increases to signal this. Therefore the reaction to dividend increase announcements should not be strong for high Tobin’s Q firms while the reaction to announcements of substantial dividend cuts should be strong. In contrast firms without high investment opportunities are not expected to enjoy an increase in cash flows, thus large dividend increases or decreases are not expected for low Tobin’s Q firms. If such dividend changes are
announced, market reaction should be strong.

Lang and Litzenberger (1989) therefore predict that if the price reaction is measured as the average to all dividend changes (increases and decreases), the average reaction in the case of low Tobin’s Q firms should be stronger than for high Tobin’s Q.

Positive reaction compared with reaction to similar changes by firms that face many investment opportunities. Similarly, large dividend decrease announcements by firms with low investment opportunities indicate an increase in the probability of over investment by management. Such announcements by low Tobin’s Q firms should therefore be met by more severe reaction. Thus similar to the conditional signaling hypothesis, the over-investment hypothesis also predicts a stronger reaction to substantial dividend increases or decreases by low Tobin’s Q firms.

To distinguish between the conditional signaling hypothesis and the over-investment hypothesis, Lang and Litzenberger (1989) further partition their sample of low and high Tobin’s Q groups into dividend increase and dividend decrease announcements. The reaction to announcements of substantial dividend decreases is the key to distinguishing between the two hypotheses. Particularly, the conditional signaling hypothesis predicts strong reactions to dividend decreases regardless of the firm’s Tobin’s Q, which is due to the negative information such announcements contain regarding future expected cash flows. In contrast, the over-investment hypothesis predicts that the reaction to dividend changes will always be greater for low Tobin’s Q firms because the potential for over-investment in the case of firms with little investment
opportunities is greater.

Thus the results in Lang and Litzenberger (1989) in favour of an agency theory based explanation for market reaction to dividend changes contradict the conclusions in Gombola and Liu (1999) in favour of conditional signaling theory. However, the results in Akhigbe and Madura (1996), Impson (1997), and Balachandran, Cadle and Theobald (1999) are consistent with Gombola and Liu (1999). These studies show that firms’ characteristics, and in particular investment opportunities (Tobin’s Q), are important in determining how the dividend signal is interpreted. Impson (1997) and Balachandran, Cadle and Theobald (1999) further illustrate that environmental factors, such as whether the firm is regulated or the dividend behaviour of other firms in the industry, also influence the price reaction to the dividend signal. Finally, Balachandran, Cadle and Theobald (1999) and Born and Rimby (1993) show that activities undertaken by the firm prior to declaration of dividend changes have implications for how this signal is interpreted. In particular, Balachandran, Cadle and Theobald (1999) show that prior activities such as past dividend declarations by the firm, influence the amount of surprise and hence the value of the dividend signal. Similarly, Born and Rimby (1993) show that past activities such as prior financing can distinguish dividend initiating firms that signal quality from dividend initiating firms that going to public (disinvest).

3.4.5 Conclusions from the empirical studies on the signaling theory of dividend

The empirical studies of the signaling theory that were reviewed in this section are summarized focuses on studies that
seek to clarify the market’s interpretation of the information contained in the dividend change announcement. Some of the empirical work that assesses whether dividend signals are realized by actual changes.

There is substantial empirical evidence to support the view that dividends are perceived to contain important information, and that the dividend signal is picked-up by market participants. Indeed consistent with Lintner (1956), it is generally found that dividend increases are typically perceived as good news with positive price reaction while the reverse is typically true for dividend reductions. However, evidence is not conclusive on the precise information that the dividend change announcement is perceived to convey. Furthermore, as noted in Allen and Michaely (1995), most if not all of the empirical work in the area cannot distinguish whether dividend policy are intended as a signaling device by firms. Evidence is also not conclusive on whether market’s interpretation of dividend changes is justified by actual future changes in performance. Finally it is noted that cross sectional differences among firms can make the dividend signal difficult to understand. Such variation, however, are sometimes utilized to disentangle the effects of signaling from agency related effects such as the over-investment theory. It is evidence on the effects of the latter on dividend policy that is discussed next

3.5.0 Empirical studies of the agency theory of dividends

3.5.1 From theory to empirics

Agency theory predicts that managers abuse their position as agents of the firm to appropriate benefits to themselves. A
A number of studies have investigated the validity of this assumption. Opler, Pinkowitz, Stulz and Williamson (1999) show that managers tend to accumulate excess cash when they have the opportunity to do so. However, they also find that firms with excess cash do not use it to over-invest as predicted by agency theory. There is also no evidence of reluctance by managers to return cash to shareholders in the form of dividends when investment opportunities are low.

Similar conclusions are also reported in Long, Malitz and Sefcik (1994) who investigate the validity of the agency cost of debt. In particular, the study investigates the under investment problem, which predicts that firms will increase dividends following the issuance of debt as a means of expropriating wealth from debt holders to equity holders. However, Long, Malitz and Sefcik (1994) find no evidence to support the view that firms act in a manner consistent with the wealth expropriation hypothesis. It is therefore concluded that reputation has greater value to the firm and its management than the value of the benefits to be obtained by a one off wealth expropriation.

Reputation is important to managers and acting as predicted by agency theory can harm their reputation, then it may be in managers’ interests to show that the firm is free of potential agency problems. One way for managers to create reputation, particularly in countries with poor protection for minority shareholders, is by paying dividends which signals decent treatment of minority shareholders. This idea is developed in La Porta, Lopez-de-Silanes, Shleifer and Vishny (2000) who term it the substitute model of dividends. However, La Porta, Lopez-de-Silanes, Shleifer and Vishny (2000) reject the substitute model in favour of what they
term the outcome model of dividends. In the outcome model dividends are the outcome of effective pressure by minority shareholders and therefore higher payout ratios tend to be observed in countries with good protection for minority shareholders.

Whether the motivation to pay dividends is due to the need by insiders to create reputation for good treatment of minority shareholders, or is the outcome of pressure by minority shareholders, dividends derive their value from reducing agency problems. Dividends can reduce agency problems by reducing the free cash flows (Jensen, 1986) or by forcing the firm to the capital market thus inducing capital market monitoring of the firm and its management (Easterbrook, 1984). Rozeff (1982) incorporates the agency-related value of dividends into a model, which he calls the cost minimization model and which allows for empirical testing of the agency theory of dividends.

There are, however, other ways to control agency costs which may be less costly than the dividend device. For example, growing firms are likely to resort to external financing on a regular basis, and thus subject themselves to external monitoring even without using dividends. Similarly Jensen (1986) proposes that agency costs may be controlled by debt. Other alternatives to dividends in controlling agency costs include managerial ownership and management compensation schemes that are designed to align the interests of managers and outside shareholders. Indeed, Fama and French (2001) propose that the declining trends in dividends by US firms may be due to growing use of stock options by managers, which lower the benefits of dividends in controlling
agency costs. Thus the availability and cost of non-dividend monitoring mechanisms may impact the degree to which the dividend device is used and thus the validity of the cost minimization model.

In light of the above discussion, the following selective review of empirical studies of the agency theory of dividends is divided into two sub sections. The first sub section describes some studies of the cost minimization model. The second sub section is devoted to some of the studies that seek to assess the degree of substitutability amongst the various methods by which firms can control agency costs.

### 3.5.2 The cost minimization model

Rozeff (1982) introduces the cost minimization model according to which the optimal dividend payout is at the level that minimizes the sum of transaction costs and agency costs. Transaction costs are incurred when external finance is raised, which may be necessary when internal funds are paid out as dividends. Agency costs are the costs associated with the agency problem. These costs can be reduced by the payment of dividends as suggested by Easterbrook (1984).

Rozeff (1982) tests the cost minimization model using Ordinary Least Squares cross sectional regression and 1000 US firms with data relating to 1981. Transactions costs faced by the firm are measured by past and forecasted growth rates in revenues and by the firm’s beta, which represents risk. An agency cost variable is taken as the natural logarithm of the number of outside shareholders, which measures ownership dispersion. It is expected
to be positively related to the payout ratio because the more dispersed is the ownership structure, the more difficult monitoring becomes. An inverse agency cost variables is the fraction of the firm owned by insiders. It is expected to be negatively related to the payout ratio, because by increasing their holdings in the firm, managers align their interests with that of outside investors. Rozeff (1982) shows the estimated coefficients on the five explanatory variables to be significant and to bear the signs predicted by the cost minimization model.

Innovations on the Rozeff’s (1982) model can basically be split into three types, including adding new variables, improving the empirical technique or focusing on particular types of firms. Llyod, Jahera and Page (1985) innovate by adding a new variable, namely firm size, and by refining the empirical approach. The empirical approach follows Rozeff (1982) by employing the Ordinary Least Squares method and data on 957 US firms for 1984. However, innovation comes in an attempt to reduce correlation between the explanatory variables by regressing the agency variables on the size variable, and using the residuals obtained in place of the original agency variables. Results indicate that after multi co linearity is properly controlled for, the cost minimization model is still valid. All the explanatory variables appear important and enter the model with the expected signs. Further, the study concludes that size is also an important explanatory variable.

Schooley and Barney (1994) also innovate on the Rozeff’s (1982) model by adding a new variable, namely the squared of insider holding, and by attempting to improve the technique. In particular they relax the linearity assumption with regard insider
holdings and assess whether the relationship between this variable and the optimal payout ratio may be more complex than originally assumed. Rozeff (1982) suggests that the optimal payout ratio should decline monotonically with rises in insider ownership. As insider ownership increases, insiders’ interests are more aligned with that of shareholders, hence agency costs are reduced and the need for the dividend tool to control these costs is lessened. Schooley and Barney (1994) suggest that at low level of ownership the relationship between dividends and insider ownership is as predicted by Rozeff (1982). However, when the level of insider ownership reaches a certain level, further increases because agency costs to start rising and the need for the dividend control tool becomes necessary. This occurs due to two reasons. First, when high proportion of their wealth is invested in the firm, insiders become less diversified. They then tend to evaluate projects based on total risk and may reject projects even when these are justifiable on systematic risk. Second when insiders hold substantial percentage of voting rights they achieve a sufficient level of control that diminishes their risk of being replaced. The results of the Ordinary Least Squares regression, using 1980 data of 235 industrial US firms provide support for the cost minimization model. Further, the relationship between insider ownership and the firm’s dividend policy appears to confirm to expectation.

Moh’d, Perry and Rimbey (1995) innovate on the cost minimization model by adding a number of new variables, and by using Weighted Least Square methodology and panel data for 341 US firms over 18 years from 1972 to 1989. The aim is to test whether variation in payout ratios across time can be explained by changes in the agency cost/transaction cost structure. To capture
the dynamics in the dividend process, variables are not aggregated and the previous period’s dividend payout ratio is added to the RHS of the model. The study also decomposes beta, the systematic risk, into its components to assess more directly the separate effects of financial leverage, operating leverage and the intrinsic business risk. Further, institutional ownership is added as an explanatory variable. According to agency theory, the presence of institutional investors should reduce payout ratios due to their role in monitoring managers’ activities as suggested in Shleifer and Vishny (1986). However, if investors consider taxes on dividends and on capital gains, then the presence of institutional ownership should increase the firm’s payout ratio as suggested in Redding (1997). Indeed, results with respect to institutional holdings indicate support for the tax hypothesis of dividends. The study also provides supports for the dynamic nature of the dividend process according to which firms adjust their dividend each year, as new information becomes available.

Holder, Langrehr and Hexter (1998) add two new variables to the cost minimization model. Free cash flow is added as an agency proxy and the firm’s focus is added to test stakeholder theory. Stakeholder theory proposes that non-investors that have implicit contracts with the firm, such as employees, customers, suppliers and others, also influence the firm’s decisions including its dividend policy decisions. Particularly, dividend policy can create value because by reducing its payout ratio, the firm signals to implicit claimants an increase in its ability to meet implicit claims. Using panel data for 477 US firms each with eight years of observations from 1983 to 1990, the study provides support for both the agency model and stakeholder theory.
It is proposed that the agency theory of dividend should fit particularly well to the behavior of regulated firms for two main reasons. First, agency conflicts in regulated firms are predicted to be particularly severe as they include conflicts between shareholders and regulators. However, by paying dividends the regulated firm exposes its managers and its regulators to capital market monitoring, which in turn contributes to reducing agency costs. Second, it is proposed that the costs associated with dividend-induced capital monitoring are lower for utilities because direct flotation costs of issuing new equity can be passed on, at least in part, to ratepayers. The study begins by comparing the mean payout ratios of utilities and S&P400 industrial firms over the period 1981-1985 and over the period 1986-1990. Results are consistent with the prediction that utilities have higher payout rates as in both periods the averages payout ratio of utilities are significantly greater than that of non-regulated firms. Further, results of cross sectional Ordinary Least Squares regressions offer support for the monitoring rationale for dividends in the case of regulated firms. Indeed, it is concluded that the monitoring rationale for dividends could be the answer to the puzzle of why firms often issue new equity while at the same time paying large dividends.

The innovation in Hansen, Kumar and Shome (1994) of applying the cost minimization model to a particular type of firms, is also the approach in Rao and White (1994). However, while the former study applies the model to firms for which the monitoring rationale for dividend is predicted to be particularly suited, the latter study applies the model to the opposite type of firms. Thus, Rao and White (1994) apply the cost minimization model to private firms
for which the monitoring rationale for dividend is predicted to be particularly unsuitable. Indeed, it is noted that the motivation to use dividend as an agency-cost controlling device may be less important for private firms due to less agency problems. Moreover, as private firms do not participate in the capital market, the rationale for dividends as inducing further equity issues leading to capital market monitoring also loses some of its momentum.

3.5.3 Contribution of Indian researchers

Another innovation in Hansen, Kumar and Shome (2004) is that they incorporate taxes into the model, as it is argued that tax savings considerations may contribute to private firms' preference for low payout policies. This is explained as follows. Owners/managers of private firms receive returns in the form of either salary, which is a tax deductible business expense, or dividends. There is therefore incentive to minimize the dividends and to increase the salary component. Although limits are imposed on the amount of salary that can be paid, owners may still have incentive to minimize dividends due to tax differentials between dividends and capital gains. However, it is noted that if the Internal Revenue Service suspects that a firm is retaining its earnings for the purpose of avoiding taxes, it may take steps to impose Accumulated Earnings Tax on that firm. Thus AET is added to the model to proxy for the tax cost of not paying dividends.

The third innovation in Rao and White (1994) is the empirical technique, which is the limited dependent variable regression as opposed to Ordinary Least Squares. The rationale for this is as follows. The sample includes 66 private US firms that had been challenged in court by the Internal Revenue Service for
Accumulated Earnings Tax liability between 1928 and 1988. However, as the Internal Revenue Service is unlikely to challenge firms with high payout ratios, the sample excludes firms with payout ratios greater than some high latent level. This implies that the dependent variable of the firms included in the sample is not normally distributed but truncated from above, and Ordinary Least Squares method is inappropriate.

Rao and White (1994) demonstrate the relevance of agency considerations to dividend decisions not merely in the most likely cases as shown in Hansen, Kumar and Shome (1994) for regulated firms, but rather in the least likely cases such as private firms. Hansen, Kumar and Shome (1994) contribute to the discussion by emphasizing the use of dividend to control conflicts beyond shareholders and managers, such as conflicts with regulators. In the same trend, Holder, Langrehr and Hexter (1998) discuss how dividend can be used to control conflicts relating to non-investor stakeholders in the firm. The complexity of agency behaviour, and in particular how insider holdings influences agency costs, is emphasized in Schooley and Barney (1994), while Moh’d, Perry and Rimbey (1995) address the dynamic nature of the agency/transaction cost structure. The latter study also illustrates the importance of tax considerations in determining the payout ratio of firms as reflected in the positive and significant impact of institutional investors on payout levels. The importance of incorporating tax into the model is also picked-up in Rao and White (1994), while the importance of firm size is shown in Holder, Langrehr and Hexter (1998), Moh’d, Perry and Rimbey (1995), and Lloyd, Jahera and Page (1985).
One thread, however, common to all the above-mentioned studies is that they provide support for the monitoring rationale of dividend and for Rozeff’s (1982) cost minimization model. However, as predicted by tax and transaction cost theories, and indeed as incorporated in the cost minimization model, using the dividend monitoring device is not costless. It has therefore been suggested by a number of studies that the extent to which the dividend-monitoring device is used to control agency cost. The partiality of the monitoring rationale for dividends (or substitutability among dividend and non-dividend mechanisms for controlling agency costs). Easterbrook (1984) points to two important implications of the monitoring rationale for dividends. First, it is noted that dividends must influence the firm’s financing policies, if the reason that they are paid is to drive the firm to the capital market. Second, as the dividend-monitoring device is costly, the presence of alternative mechanisms that limit agency problems, or conditions that force the firm to the capital market, should reduce the use of the dividend device. The implications of these two points are that the dividend rationale is applicable only in some cases. Further, in these cases, the dividend and capital structure decisions are endogenous variables and should be modeled as a pair of simultaneous equations in a signal model.

Noronha, Shome and Morgan (1996) test whether the presence of growth-induced monitoring or other non-dividend devices that limit agency problems, lessen the monitoring role of dividends and the simultaneity of dividend and capital structure decisions. For that purpose a sample of 341 US industrial firms is stratified according to the presence of growth opportunities as measured by Tobin’s Q. A firm with Tobin’s Q value above the
sample average is classified as high on growth opportunities. The sample is then further stratified according to the presence of alternative non-dividend monitoring mechanisms. A firm is classified as possessing alternative non-dividend monitoring mechanism if it satisfies two conditions. First, the firm has to have an above average incentive component in its managerial compensation package, which serves to align managers-shareholder interests. Second, the firm has to have a single large outside shareholder holding at least 5% of the firm’s equity, because a large outside shareholder serves as an external monitor and a potential take-over threat.

The stratification procedure, in Noronha, Shome and Morgan (1996), results in two sub-samples. Sample A consists of 131 firms with high alternative control mechanisms and/or growth-induced capital market monitoring. Sample B consists of 210 firms with low alternative control mechanisms and low growth opportunities. The sample data is pooled from the period 1986 to 1988 following a Chow test that fails to reject the null of stability. The monitoring rationale for dividends is tested by an Ordinary Least Squares regression of a variant of the cost minimization model, where firm size is taken as a proxy for transaction costs. Results for group A are weak, as none of the agency cost/transaction cost structure variables are insignificant. In contrast, results for group B support the cost minimization model as the coefficients on all the variables bear the expected signs, and all but the coefficient on firm size are significant.

In the second part of the study, Noronha, Shome and Morgan (1996) test for simultaneity between dividend and capital
structure decisions. It is predicted that simultaneity should be evident only in cases where the dividend monitoring rationale applies. Indeed, results of a Three Stage Least Squares tests show no evidence of simultaneity of dividend and capital structure decisions for group A. The equity ratio explanatory variable in the payout equation and the payout variable in the equity ratio equation are both not significant. In contrast, for group B both, the equity ratio variable in the payout equation and the payout variable in the equity ratio equation are negative and significant. These results as well as the results from testing the validity of the cost minimization model, support the partial explanation of the monitoring rationale for dividends.

More support for the partial explanation of the monitoring rationale for dividends is provided by Johnson (1995), who studies 129 straight debt offerings by NYSE/AMEX industrial firms between 1977 and 1983.

Johnson (1995) illustrates the importance of debt as an alternative to dividends in controlling agency costs. Crutchley and Hansen (1989) make the same point and suggest that leverage can achieve these results because debt finance reduces equity financing and hence manager-shareholder conflicts. Crutchley and Hansen (1989) further note that manager-shareholder conflicts may also be reduced by increasing insider holdings. However, the crucial point in the study is the realization that each of the three agency control devices, namely managerial ownership, leverage and dividends, is costly. For example, while increasing management’s ownership helps to align manager-shareholder interests, it also increases the proportion of the manager’s total
personal wealth, which is invested in the firm. As the manager suffers increasing lack of diversification, she will be more risk averse even when this is not in line with shareholder interests.

To test the agency theory of managerial ownership, leverage and dividends, Crutchley and Hansen (1989) use 603, US industrial firms for the period 1981 to 1985, and Ordinary Least Squares analysis. Particularly, each of the three policy decisions is regressed on five firm’s characteristics that are hypothesized to influence the levels of the costs associated with each policy. These explanatory variables include firm diversification, earnings volatility, flotation costs, advertising and R&D expenditure, and firm size. The results support the notion that managers employ a mix of policies including leverage policy, dividend policy and managerial ownership incentives in an effort to control for agency costs in the most efficient manner. The precise combination of policies varies across firms and is determined by firm’s characteristics.

First Crutchley and Hansen (1989) find that managers of diversified firms bear relatively lower costs in increasing the percentage of their wealth invested in the firm’s equity. Thus diversified firms tend to use more of the managerial ownership device and less of the debt and dividend devices to control agency costs. Second firms with volatile earnings face higher bankruptcy risk thus managers reduce leverage and increase dependency on managerial ownership and dividends. Third firms with volatile stock expect to pay higher underwriting fees when issuing new equity thus they tend to increase the use of managerial ownership and leverage, but avoid using dividends. Forth, firms with high R&D expenditure have more freedom to engage in wealth expropriation
from both debt and share holders, thus these firms tend to use less debt and dividends and more managerial ownership. Fifth, large firms face lower bankruptcy costs and lower flotation costs on the issue of new equity, while managers of these firms find it more expensive in terms of diversification costs to increase their percentage holdings. Thus large firms tend to rely more on the debt and dividend policy devices and less on managerial ownership.

Similar to Crutchley and Hansen (1989), Agrawal and Jayaraman (1994) also investigate the substitutability between leverage, dividends and management ownership in controlling agency costs. The study utilizes 71 industry-size matched pairs of all-equity and levered firms for the year 1981, and an Ordinary Least Squares regression analysis. Specifically, proxies for dividend policy are regressed on leverage, managerial ownership, an interaction term, and on two control variables including free cash flow and growth. Results show the coefficient on the leverage dummy, to be negative and significant, which is consistent with the prediction that all-equity firms follow a policy of higher payout ratios than levered firms. Similarly, consistent with the prediction those firms with lower insider ownership adopt higher payout ratios; the coefficient on this variable is reported as negative and significant. This negative correlation between dividends and insider ownership is stronger in all-equity firms as observed by the positive and significant coefficient on the interaction term between leverage and insider ownership.

Bathala and Rao (1995) introduce Board composition as a possible agency-cost-controlling device. They investigate the interrelation between Board composition, insider ownership,
dividends and leverage as alternative mechanisms for reducing manager-shareholder conflicts. It is argued that outside directors on the Board can reduce conflicts due to their independence and due to the need to maintain reputation in the market for their services. To test this, 261 non-regulated, US firms are used in a cross sectional Ordinary Least Squares regression of a measure of Board composition on alternative agency-cost control devices and on a set of control variables. The results from this procedure show that the alternative agency-cost control devices, including insider holdings, dividends and leverage, have a negative and significant impact on the fraction of outside directors on the Board. These findings are consistent with the notion of firms relying on a mix of alternative mechanisms, including Board composition, to control agency conflicts.

Bathala and Rao (1995) note that alternative mechanisms may control different aspects of agency conflicts and that each mechanism may have other, non-agency-related benefits, associated with its use. Empirical work appears to confirm the presence of substitutability amongst various mechanisms including dividends, leverage, managerial ownership and incentive schemes, the presence of a large shareholder, growth, and outside directors on the Board. In the face of these many alternatives, the agency related value of dividends is still unclear.

3.5.4 Conclusions from the empirical studies on the agency theory of dividend

The agency theory of asserts that dividends reduce agency costs by either forcing the firm to the capital market thus solving the collective monitoring problem, or by reducing the free cash at the
discretion of management. The cost minimization model as designed by Rozeff (1982) encapsulates this idea and shows that there is an optimal payout level that minimizes the transactions-agency costs structure. Summarizes the main points from Rozeff (1982) and subsequent studies of the cost minimization model. The results appear to support Easterbrook’s (1984) proposition that dividends have agency related value.

However, even if dividends may contribute to reducing agency costs, rather than merely signaling internal information, which will be revealed in the longer-term whether or not dividends are paid, the value of the dividend contribution is still unclear. The reason for the ambiguity is the availability of a wide range of alternative non-dividend mechanisms to reduce agency costs. Some researchers have sought to shed light on the degree substitutability amongst the various agency controlling devices.

The aim of this chapter was to take stock of the generic theories that have evolved under market imperfections such as transaction costs, taxes, information asymmetries and agency conflicts. It was also intended to review the main empirical methodologies and evidence collected so far, in an endeavor of clarifying where the dividend controversy stands today, after four decades of debate.

The generic dividend theories introduced here include the transaction costs theory, the tax hypothesis, the bird in the hand argument, and the signaling and agency theories. The transaction cost theory of dividends is based on transaction costs and control considerations that are associated with paying dividends and then
resorting to external finance to fund investments. Also incorporated under this theory are pecking order considerations, which are based on information asymmetries and which become relevant if dividends are paid and external finance raised. Thus, the transaction cost theory of dividends basically suggests that firms should utilize retained earnings to the extent possible before paying out dividends.

The tax hypothesis proposes that government distortions by way of taxes have important implications for dividend policy and firm value. Thus the tax hypothesis generally states that due to differences between taxes on dividends and on capital gains, generous dividends reduce wealth. Accordingly, the share prices of firms that adopt high payout policies will reflect this tax disadvantage. The underlying assumption here is that all investors are taxed the same and that dividend income is taxed more heavily than capital gains. Alternatively, if there exist tax-based clienteles for low and high dividend policies, or if transaction costs are not too high as to prohibit active trading, then tax effects on prices should disappear.

The bird in the hand argument is the traditional rationale for generous dividends, and is based on the idea that dividends reduce risk because they bring shareholders’ cash inflows forward. This argument, however, is commonly repudiated by the assertion that the risk of the firm comes from the investments in which it is involved, not from how the proceeds from these investments are distributed. A more credible argument in favour of dividends is the signaling theory, which is based on information asymmetries between managers and outside shareholders. Thus according to
the signaling theory, unexpected dividend changes convey valuable information to market participants that relate to managers’ expectations regarding the prospects of the firm.

The last dividend theory discussed in the agency theory of dividends which, like the signaling theory, proposes that dividends are value enhancing. However, while the signaling theory is based on the assumption that managers always act in the interests of existing shareholders, the agency theory relaxes this assumption and allows for agency conflicts. The agency theory of dividends is different from the signaling theory in another crucial respect. Particularly, according to the signaling theory dividends have no value in themselves, but their value is derived from the information they contain about the firm’s fundamentals. In contrast, the agency theory of dividends states that the payment of dividends is in itself valuable because it controls agency costs in two ways. First, the payment of dividends reduces the free cash flows under managers’ discretion. Second, the payment of dividends forces the firm to the capital market inducing external monitoring of the firm and its management, which is valuable due the free rider problem of collective monitoring.

The discussion on the theoretical themes that have developed to explain the dividend puzzle was followed by a review of some of the relevant empirical methodologies and evidence. Event studies around ex-dividend days are typically used to investigate tax clientele effects. Similarly, the market reaction to the dividend signal is often investigated by event studies around dividend announcement dates, while other methodologies include comparison and regression analyses. However, one unique
approach to understanding dividend policy, whose findings have been central to the dividend debate, is the Lintner’s (1956) survey of US managers. The main conclusions from this study are that managers concern themselves primarily with the stability of dividends, believing that the market reacts favourably to dividend increases and unfavourably to decreases. Furthermore, the level of earnings is the most important determinant of the dividend level, and the dividend decision is taken before other decisions such as investment decisions, which are then adjusted.

Lintner's (1956) study is consistent with the signaling rationale for dividends. However, evidence from empirical studies of the signaling hypothesis is mixed. In general it appears that the market reacts strongly to unexpected dividend changes, and that the reaction is typically in the same direction as the dividend change. However, evidence is weaker on actual changes in performance that follow the dividend change announcement. Similarly no consensus has been achieved on the effects of taxes, particularly on whether taxes have permanent or only temporary impact on prices, although the general conclusion is that taxes enter the dividend decision. The transaction/agency costs structure faced by the firm appears important in determining its dividend policy. However, there is also evidence of substitutability amongst dividends and other agency cost control devices such as leverage, managerial ownership, incentive schemes, investment opportunities and others. Thus the general conclusion is that after four decades of debate, the jury is still out on the dividend puzzle.

For this matter, further research is required to sustain the spotlight on the dividend puzzle. In particular, there are four
promising research ideas (PRIs), which derive directly from the theoretical and empirical literature surveyed in this chapter. The first PRI relates to the role of agency theory in explaining dividend policy for firms operating in emerging markets, where imperfections are the norm rather than the exception. In these markets agency conflicts and information problems can be expected to loom strong and the finance gap to be particularly wide. Thus models that incorporate these factors, such as the cost minimization model reviewed in the chapter should describe well the target payout process of firms in emerging markets.

The second PRI is inspired by developments in areas of corporate governance, and therefore seeks to attain a synergy between corporate governance and the dividend policy puzzle. It may be that the failure to unravel the dividend puzzle has been amplified by failure to recognize interaction of the dividend policy practice with other business features. One idea is to bring together the literature on business groups and firm ownership in order to understand dividend policy, especially in the case of emerging markets.

The third PRI recognizes that different theories may have the same practical implications thus making difficult the task of distinguishing amongst them. For instance, both agency theory and signaling theories predict a positive reaction to dividend increases and negative reaction to decreases. One possible method of distinguishing between these theories is by exploiting institutional differences across countries, as in Dewenter, and Warther (1998) with respect to the US and Japan. Furthermore, cross-country comparisons can also assist in establishing fine distinctions
between various under-themes within major theories. For example, La Porta, Lopez-de-Silanes, Shleifer and Vishny (2000) use cross-country comparisons to distinguish between two competing agency models of dividends, namely the outcome and substitute models.

Finally, the forth PRI is to use a system of equations instead of the single equation model of dividends. This idea is discussed in Prasad Green and Murinde (2001), and acknowledges the possibility that policy choices may be simultaneously determined. An example is Jensen, Solberg and Zorn (1992), where insider ownership, debt and dividend policies are modeled as a simultaneous equations system.