

Do Dividend Initiations Signal Firm Prosperity?

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Abstract

In this paper we study the significance of dividend initiations in the context of firm performance, risk, and shareholder returns. Our evidence contradicts the principal implication of the signaling hypothesis that increase in dividend rate is positively related to future firm prosperity. We observe that firms report improving profitability, cash flow and other performance measures leading up to dividend initiation, but subsequently there is significant and sustained reversal across all these measures. We also observe that share prices react positively to dividend initiation announcements, suggesting that they are not anticipated by investors and are interpreted as positive news. However, over the five-year period subsequent to dividend initiation stock returns are significantly lower than that of the market, indicating that investors initially underestimate the deterioration in future profitability and performance of dividend-initiating firms. An observed decline in firms' market-to-book ratios over this period suggests that investors eventually lower their initial expectations of firm growth and prosperity.

1. Introduction

1.1 Motivation and Research Questions

Why do firms initiate dividends? On the face of it, dividend initiation is the first public indication of managers' willingness to return excess or free cash to shareholders instead of investing in new or ongoing projects.¹ By initiating periodic dividends, managers also reinforce their loyalty to shareholders as there is an expectation that they will continue to pay dividends for the foreseeable future unless circumstances are beyond their control – if the firm is financially constrained or new management changes this policy.

The information asymmetry hypothesis argues that managers have private information about future prospects of a firm and choose dividends to signal that private information.² The signal is credible if other firms with inferior future prospects cannot mimic the dividend announcements and policies of firms with strong prospects. These theories imply that dividend payment is economically logical, and generate hypotheses about the announcement effects of dividends that have been observed empirically.

These arguments, which call for economic justification of dividends – as a governance and signaling mechanism – are convincing, but empirical evidence in their support is not conclusive. This paper investigates the empirical significance of dividend initiation from the perspective of firm performance and shareholder return for 530 U.S. firms that initiated dividend payments between 1989 and 1999. We focus on dividend initiation because it marks an important point in the evolution of a firm's financial policy.

We address three principal research areas in this study. First we document changes in firms' performance variables ten years before and after dividend initiation. We also study

¹ If the firm has repurchased stock prior to dividend initiation then clearly dividend initiation is not the first time that the firm has returned excess or free cash to shareholders, but it still signals the firm's intention of doing so on a regular, predictable basis.

² See Bhattacharya (1979), John and Williams (1985), and Miller and Rock (1985)

changes in volatility of a firm's profitability leading up to and subsequent to dividend initiation. Finally, we study market reaction and shareholder returns immediately after dividend initiation announcement, as well as the drift in stock prices for the five-year period after dividend initiation.

1.2 Principal Hypothesis and Research Contribution

The central hypothesis explored in this study is that dividend initiation does not signify future prosperity of the firm, and that past performance of the firm is a more important contributing factor for managers' decision to initiate dividends than their expectations of its future prospects. It is possible that strong past performance may contribute to managers' expectations about the firm's future ability to generate more stable profitability and cash flows, but managers do not consider dividend initiation as a mechanism to communicate their expectations of higher growth or prosperity. In effect, our hypothesis contradicts the implication of signaling theory that dividend increases convey positive information about future firm performance.

This hypothesis leads to several testable implications from the investigation of firm performance and stock returns before and after dividend initiation. If dividend initiation signifies past prosperity then we should expect improving firm profitability leading up to dividend initiation, but not thereafter. If investors are aware that dividend initiation signifies past performance but not future prosperity, then stock price should not react positively to dividend initiation announcement. If a positive stock price reaction to dividend initiation is observed, then it should be related to an expected decline in the variability of future profitability. Over longer time periods, investors should lower their expectations of firm growth and prosperity, which should be observable through in negative stock price drift and lower market-to-book ratios of dividend initiating firms.

This study corrects for the weaknesses of previous research in this area and makes several contributions to the body of empirical literature. Our methodology and tests differ from those of previous studies and in four respects: (1) Our observation period is more recent

(1989-99) and is more reflective of the current environment and standards with respect to corporate disclosure and the efficacy of signaling through dividends; (2) We study only dividend initiations because they represent important change in financial policy of a firm, and we exclude any other changes in dividend policy (increase, decreases, omissions and discontinuations); (3) We study short-term *and* long-term market reaction and shareholder returns surrounding dividend initiation; and (4) We study a broad set of firm performance measures both before and after dividend initiation.

1.2 Literature Survey

1.2.1 Signaling Hypothesis

Miller and Modigliani (1961) suggested that dividends do not affect the value of the firm under the assumption of perfect capital markets and zero taxes. If we assume that managers have superior information about the firm's future earnings and they incorporate this information in setting dividends, outsiders should believe that dividends have information content as indicators of future earnings changes.³

This construct forms basis of signaling models (Bhattacharya (1979), Miller and Rock (1985), and John and Williams (1985)). These models imply that a change in dividend policy is an indicator of firms' future prospects and therefore dividend increases should be followed by improvements in profitability, earnings, and growth rates. This implies that there should be a positive relationship between dividend changes and subsequent stock price reaction.

Evidence from empirical examination of signaling models has not been conclusive. Watts (1973) and Gonedes (1978) find weak evidence of earnings increases following

³ We assume that there is a positive relationship between managers' expectations of future firm performance and the dividend rate. This is the principal hypothesis of Lintner (1956) who also provides empirical evidence that managers consider their expectations of future earnings when making dividend decisions.

dividend decreases. Penman (1983), however, finds that dividends convey no incremental information controlling for the effects of management earning forecasts.

More recently, Benartzi, Michaely, and Thaler (1997) find that earnings growth rates of dividend-increasing firms do not subsequently increase. Moreover, they find that firms that decrease dividends experience significant increase in earnings growth rate in the following years. Grullon, Michaely and Swaminathan (1999) find that firms that increase dividends experience significant decline in their systematic risk, profitability, capital expenditures and cash levels, and suggest that dividend increases may be an important element of a firm's long-term transition from growth to a more mature phase. The evidence from these two studies strongly contradicts the central implication of signaling models that dividend changes are positively related to subsequent increases in profitability.

1.2.2 Dividend Initiation

Three studies have examined the stock price reaction of dividend initiation announcements and subsequent firm performance.⁴ Asquith and Mullins (1983) analyze 168 firms that initiated dividend payments during the 1963-80 time period and the subsequent effect on shareholder wealth.⁵ They use average daily excess returns and cumulative excess returns for 2-day announcement period and for 20-day period surrounding the initial dividend announcement. If dividend initiation imposes negative wealth effect on existing shareholders, it should have a negative effect on the stock price. On the other hand, observed increase in stock prices would support the signaling hypothesis. They find that excess returns over the 2-day announcement period are both large and significant. This implies that any negative wealth effect that is generated through changes in tax-induced clientele is more than offset by the value that investors place on dividend payments and on the establishment of a signaling mechanism.

⁴ We describe these studies in greater detail because our study closely parallels their research objectives.

⁵ Their definition of dividend initiations include dividends commenced them after a 10-year hiatus.

Venkatesh (1989) conducts a similar analysis for dividend initiating firms. His principal hypothesis is that the information content of quarterly earnings announcements decreases after the introduction of cash dividends by a firm. His sample period is 1972-83 and consists of 72 firms that initiated dividends during this period. He finds that the average price reaction to earnings announcements is smaller in the post dividend-initiation period, regardless of whether earnings precede or follow dividend announcements. He also finds that the volatility of shareholder returns is lower in the post dividend-initiation period, primarily due to decrease in the firm-specific component of volatility of returns. The possible explanation is that investors accord less importance to firm-specific information after dividend initiation.

Healy and Palepu (1988) examine if changes in dividend policy convey information about future earnings of firms. They observe the impact of dividend initiation on shareholder value and also on earnings per share five years before and after dividend initiation announcements. They also study if earnings changes subsequent to dividend initiation or omission are related to information released at the time of the initiation announcement. They find that firms that initiate dividends have significant increases in their earnings for at least one year before, the year of, and the year following dividend initiation.

These three studies suffer from several shortcomings. Asquith and Mullins (1983) do not measure the impact of dividend initiation on shareholder wealth for periods beyond 10 days after dividend initiation. They also do not study trends in profitability and other firm specific parameters prior to and after dividend initiation. The measurement period used by Venkatesh (1989) is even narrower than that used by Asquith and Mullins (1983) and Healy and Palepu (1988). He also does not analyze firm specific characteristics or variables and thus does not investigate the relationship between these variables and shareholder returns.⁶

⁶ He measures return as the absolute value of the sum of algebraic returns on days -1, 0, +1 where day 0 is the announcement day for dividend initiation or change.

Healy and Palepu (1988) correct for some of the shortcomings of the previous two studies. They use a longer measurement period for observing abnormal shareholder return and also study earnings trends before and after dividend initiation. However, their sample size appears to be quite small (131 firms) compared to the universe of firms that initiated dividends during their observation period.⁷ This potential sample selection bias could be the result of earnings data for all firms that initiated dividends not being available from their principal data sources at the time when their study was conducted.⁸ They also limit the observation period to four years before and after dividend initiation, thus precluding the information that may be contained in long-term earnings trends. They also limit firm-specific observed variables to earnings growth, and do not examine other variables that could provide additional insights into firm performance around and subsequent to dividend initiation.

1.3 Overview of Results

1.3.1 Dividend Initiation and Firm Performance

Our results indicate that during the three-year period prior to dividend initiation, firms report significant improvements across key performance measures. Profitability is stronger, cash flow generation improves and financial leverage trends down. However, these improvements trail off after dividend is initiated. Our analysis suggests that subsequent to dividend initiation and ten years thereafter, firms report *declining* profitability, *increasing* capital expenditures (as a percentage of free cash flow), and *rising* financial leverage. The observed deterioration in firm performance is significant and consistent across all measures.

We also find that firms' earnings variability declines significantly after dividend initiation. Tests of systematic risk of dividend-initiating firms show that it also declines

⁷ Our search with similar sample selection criteria found that over 2,000 firms initiated dividends during the period 1963-80.

⁸ They use *Compustat* files and the *Wall Street Journal Index* as their primary sources.

subsequent to dividend initiation. We find positive excess returns in the period immediately after dividend initiation announcements, but excess returns over the five-year period after dividend initiation are significantly lower than for a comparable period prior to dividend initiation.

Our observation that firm profitability and other parameters improve during the period leading up to dividend initiation is consistent with Lintner's (1956) observation that managers consider past earnings when making dividend policy decisions. Lintner's description also suggests that managers incorporate their expectations of future earnings performance into dividend initiation decisions. This implies that dividend initiation decisions should be interpreted as managers' forecasts of future earnings changes. If there is a positive relationship between these two factors, then earnings should improve after dividend initiation. But we find that firm performance declines after dividend initiation. This implies that managers either do not incorporate their expectations of future earnings into dividend initiation decisions, or if they do, their projections of continued growth in profitability are too optimistic.

Another possibility is that managers suspect that the prosperity and growth of the firm is not sustainable. They initiate dividends as a preemptive measure to dampen the potential market reaction and the impact on share price when investors realize that its performance is deteriorating. In this scenario, dividend initiation can be considered as "window dressing" or a signal to mimic the performance of firms that are strong performers and generate *sustainable* growth in profitability and cash flow. However, mimicking strong expected performance may not be what managers intend to signal by initiating dividends. It is possible that dividend initiations signal precisely what is realized – a deterioration in the firm's performance and slowdown in growth, whether it is intentional or unintentional on part of managers.

1.3.2 Dividend Initiation and Firm Maturity

Grullon, Michaely and Swaminathan (1999) suggest that dividends convey information about a firm's transition from growth phase to a mature phase. They characterize dividend increases as indications of firm maturity and suggest that declining reinvestment rate gives rise to excess cash, which is paid out in the form of dividends.

In the absence of a rigorous definition or proxy for firm-specific indicators of maturity, we investigate several parameters and find that the evidence is mixed.⁹ We find stronger evidence of maturity from the analysis of the ratio of market value of assets to their book value (a proxy for Tobin's Q) for firms that initiate dividends. We observe that this ratio declines after dividend initiation – implying that firms that initiate dividends are maturing.

1.3.3 Initial Market Reaction to Dividend Initiation Announcement

But then what explains the market's positive reaction after dividend initiation announcement. There could be three explanations. The first one being that the market is aware of the importance of dividend initiation as a predictor of more stable earnings, and that the perceived benefits of this decline in systematic risk more than offset the expected decline in profitability and cash flow generation. Investors, if they were not aware of a firm's transition towards more stable earnings, would be positively surprised by this additional information and thus bid up the stock price.¹⁰

The second reason could be that shareholders expect dividend initiation to result in lower agency costs. Dividend initiation is clearly a publicly observable confirmation that managers are acting in shareholders' interests. Dividends also lead to reduction in cash

⁹ Maturing firms should generate high levels of free cash flow and declining levels of capital expenditures. Grullon, et al. only study capital expenditures as a percentage of total assets, and thus their analysis is limited in concluding that a declining ratio is a proxy for firm maturity. We conduct similar tests (including the ratio of free cash flow to capital expenditures for the 21-year observation period and find that this ratio declines significantly after dividend initiation. This finding suggests that firms that initiate dividends actually accelerate capital expenditures in relation to free cash flow.

¹⁰ See Jensen (1986) and Stulz, (1988)

that is available to managers for discretionary uses.¹¹ Shareholders would expect that managers will be more disciplined with respect to pursuing growth opportunities and incurring related capital expenditures. This is especially important if the firm is maturing or facing slow growth in its core businesses. Dividend initiation signals that managers recognize the slowdown in growth and are communicating to outsiders that it will not spend free cash flow from maturing core businesses on suboptimal projects, investments, or acquisitions in attempts to put the firm on a growth track.

1.3.4 Stock Price Drift

The long-term drift in stock prices observed after dividend changes is most likely a result of two factors. We have observed that the variability of profitability declines after dividend initiation and investors may reward this in the form of positive drift in stock prices. On the other hand, as profitability and all other firm specific factors deteriorate after dividend initiation and as investors gradually learn the full implications of dividend initiation, (most likely through publicly observable confirming events), we should expect a negative impact on share returns.¹² Thus, in the long run, share prices should conditionally decrease with decline in profitability and firm prospects, and increase with decline in risk. We find that stock prices of firms that initiate dividends experience negative drift (compared to a market proxy) during the five-year period after initiation. This would suggest that over the long run, positive effects of decline in risk and agency costs do not offset negative effects of changes in profitability.

Rest of this paper is organized as follows. Section 2 describes the data and provides summary statistics. Section 3 discusses results related to firm profitability, capital expenditures and other measures. Section 4 examines the link between the informational role of dividends and market reaction. Section 5 discusses the implications of our findings for existing theories of dividend policy and concludes.

¹¹ This is likely to be the case even if dividend pay out is more symbolic than material.

¹² See Charest (1978), Benartzi, Michaely, Thaler (1997)

2. Sample, Data Items, and Descriptive Statistics

2.1 Dividend Initiation Sample

The sample is drawn from dividend initiation announcements of firms listed on the New York (NYSE), American (AMEX) and NASDAQ stock exchanges between 1989 and 1999 that have data available on CRSP and COMPUSTAT. An announcement is considered as dividend initiation announcement if it is for either the first dividend ever paid in a firm's history or for resumption of dividend after at least a ten-year break.¹³ The time period used for this screening was from 1979-89 so that the first dividend payment that is included in the sample occurs after 1989. For all firms in the sample, initial dividend was paid at least one year after the firm was listed on NYSE, AMEX or NASDAQ. Table 1 reports the number of firms in various dividend initiation categories classified by sample selection criteria.

To be included in the sample, a dividend initiation announcement had to satisfy the following criteria:

- (a) Firm's financial data is available on CRSP and COMPUSTAT.
- (b) The distribution is a quarterly, semiannual or annual taxable cash dividend paid in U.S. dollars.
- (c) The shares on which the dividends are paid are ordinary common shares and are not shares of Americus Trust components, closed-end funds, or REITS.
- (d) The firm has never announced or paid a dividend during the previous ten years.

¹³ This is same as the definition used by Healy and Palepu (1988)

- (e) Other non-dividend distribution events such as stock splits, stock dividends, and mergers do not occur within 15 trading days surrounding the dividend initiation announcement.
- (f) Dividend initiation is announced in 1989 or thereafter
- (g) Firms in the following groups are excluded: financial services firms (SIC Code 6000-6999); utilities (SIC Code 4900-4999); REITS; ADRs; and other non-common corporations (Share Code other than 10 and 11 in the CRSP database).
- (h) Only ordinary quarterly dividend initiations (distribution code 1232) are included.
- (i) Dividend initiation is not before the first year anniversary of the initial public listing of the firm.

Table 1 reports the number of firms in various dividend initiation categories classified by sample selection criteria. The total number of firms that initiated dividend or commenced dividend payment after a 10-year hiatus is 4,297. Of these 1,687 firms announced dividend initiation within one year after being publicly listed, 82 firms have missing dividend declaration dates. Of the remaining firms, 933 firms announced dividend initiations before 1963 and 1,029 firms in the 1963-89 time period. Of these, 36 firms do not have valid data on COMPUSTAT. We include the remaining 530 firms that initiated dividends during the 1980-99 time period in the sample.

2.2 Data Items and Definitions

For each dividend initiation announcement in the sample, we obtain from CRSP, current and lagged quarterly dividends, stock returns and NYSE/AMEX/NASDAQ value-weighted and equal-weighted market returns for a three day window (-1 to +1) around dividend initiation. We also obtain these data fields for a three-year period after dividend initiation. In addition, we obtain stock price and market capitalization at least five days

prior to dividend initiation, and the average daily turnover over the 252-day period prior to dividend initiation announcement. These variables are helpful in understanding characteristics of firms that initiate dividends.

From COMPUSTAT, we obtain accounting data for a maximum of 21 years (–10 to +10) surrounding the announcement year for firms for which data for this time period is available.¹⁴ Year 0 or the base year is defined to be the fiscal year corresponding to the calendar year in which dividend initiation is announced.¹⁵

The following data items are obtained from COMPUSTAT:

- (a) Total Assets, annual data item (6)
- (b) Operating Income before Depreciation and Amortization, annual data item (13)
- (c) Net Income before Extraordinary Items, annual data item (18)
- (d) Common Dividends, data item (21)
- (e) Book Value of Common Equity, annual data item (60)
- (f) Capital Expenditures, annual data item (128)
- (g) Cash and Short-term Investments, annual data item (1)
- (h) Preferred Dividends, annual data item (19)

¹⁴ For calculation of variability of return on assets we do not include firms that have less than seven years of data available around dividend initiation (from years –3 to +3).

¹⁵ As an example, if the dividend initiation announcement was made in calendar year 1995, then the base year for COMPUSTAT data is considered to be 1995 irrespective of which month in 1995 the initiation announcement was made.

(i) Deferred Income Taxes, annual data item (50)

(j) Depreciation and Amortization, annual data item (14)

(k) Earnings before Interest, Taxes, Depreciation, Amortization, and Rents, annual data item (13)

(l) Income Taxes, annual data item (16)

CAR is considered as a measure of market reaction to the dividend-initiation announcement. The abnormal stock price reaction to dividend-initiation announcement is defined as the sum of the difference between the stock return and the value-weighted NYSE/AMEX market return. The market model is used as the normal performance return model:

$$r_{it} = \alpha_i + \beta_i r_{mt} + \varepsilon_t \quad (1)$$

where r_{it} is the stock return and r_{mt} is the value-weighted market return including dividends. The daily returns of the firms in the sample are regressed on the market return from day $T = -120$ to day $T = +120$ excluding the 31 days around dividend-initiation announcement ($T = -15$ to $T = +15$). The predicted normal return is then subtracted from the market model from the actual return for day $T = 0$ and $T = 1$. These daily returns are then added to compute the 2-day CAR (cumulative abnormal return).

We define profitability as earnings before interest and taxes (EBIT) divided by total capital deployed:

$$ROAI_i = \frac{(\text{Earnings Before Interest and Taxes})_i}{(\text{Book Equity} + \text{Book Debt})_i} \quad (3)$$

In addition, we use return on assets (ROA) based on operating income before depreciation to measure profitability following the methodology suggested by Barber and

Lyons (1996). The return on assets is then defined as the ratio of operating income to total assets:

$$ROA2_i = \frac{\text{Operating Income}_i}{\text{Total Assets}_i} \quad (4)$$

The change in return on assets of firm 'i' is defined as:

$$ROA_{i,t} = ROA_{i,t} - ROA_{i,t-1} \quad (5)$$

Capital expenditure ratio of a firm is defined as:

$$CEI_i = \frac{\text{Capital Expenditures}}{\text{Total Assets}_i} \quad (6)$$

In addition, we use two alternate ratios to investigate the trend in a firm's generation of free cash flow. (Free cash flow is computed as = Net Income before Extraordinary Items (18) - Preferred Dividends (19) + Deferred Income Taxes (50) + Depreciation and Amortization (14))

$$FCF1_i = \frac{\text{Free Cash Flow}_i}{\text{Capital Expenditures}} \quad (7)$$

$$FCF2_i = \frac{\text{EBITDAR} - \text{Income Taxes Paid}_i}{\text{Capital Expenditures}} \quad (8)$$

EBITDAR (6) is computed as earnings before interest, taxes, depreciation, amortization, and rents.

Cash and short-term investments to total asset ratio is computed as follows:

$$\text{Cash}_i = \frac{\text{Cash \& Short-Term Investments}_i}{\text{Total Assets}_i} \quad (9)$$

Financial leverage is computed as debt-to-total capital ratio. We use two alternate definitions of this ratio. The first definition – book leverage – is defined as the book value of total long-term debt plus the book value of total short-term debt divided by the total book capital (the book value of total long- and short-term debt plus the book value of stockholder’s equity). The second leverage ratio is based on market capitalization and is defined as the book value of total long-term debt plus the book value of total short-term debt divided by the total market capital (the book value of total long- and short-term debt plus the market value of stockholder’s equity).

We consider the ratio of firms’ market value of assets to their book value (a proxy for Tobin’s Q) as an indication of investors’ expectation of a firm’s growth prospects or investment opportunities, and thus a proxy for firm maturity. A high market-to-book ratio is assumed to signify that a firm has strong growth prospects and vice versa.¹⁶ For the computation of this ratio market capitalization is defined as the book value of total long-term debt plus the book value of total short-term debt plus market value of equity. Book capitalization is defined as the book value of total long-term debt plus the book value of total short-term debt plus book value of equity.

2.3 Industry Comparison Sample

We collect a sample of comparison firms to provide benchmarks for profitability and other parameters for evaluating performance of firms in the data set prior to and after dividend initiation. For each year during which a firm in the data set initiates dividends, comparison firms are selected from the S&P 500 index that have the same first two digit SIC industry codes as the dividend-initiating firm. Once a comparison firm is selected for a dividend-initiating firm, it is not changed over the observation period even if it is dropped from the S&P 500 index. We follow this methodology to avoid survivorship bias in comparison samples.

¹⁶ See Damodaran (1996) and other standard corporate finance textbooks.

Data from the set of comparison firms is used as follows: (i) For each year of observation, simple arithmetic average is computed for all comparison firms for a dividend initiating firm for each firm-specific parameter; and (ii) The difference between the firm-specific parameter and average for the same parameter for the set of comparison firms is computed and reported for all parameters for each observation year.

2.4 Preliminary Statistics

Table 2 provides preliminary statistics on dividend initiating firms in the dataset. The average market-to-book ratio for firms at the time of dividend initiation is 1.23 . As a comparison, the average M/B ratio for the firms in the S&P 500 index over the 1991-2000 period is 1.69. Overall, firms that initiate dividends are not significantly different from average for firms listed on the NYSE/AMEX/NASDAQ.

3. Changes in Firm-Specific Parameters

In this section we analyze profitability, risk and other characteristics of firms that initiated dividends during the observation period. We begin by examining changes in profitability before and after dividend initiation. We then examine variability of profitability, level of capital expenditures, financial leverage, credit ratings, cash and marketable securities, and the ratio of firms' market value of assets to their book value.

3.1 Change in Return on Assets

Table 3 summarizes the results of the analysis of changes in profitability (measured as return on assets) of dividend-initiating firms before and after dividend initiation. The table presents the average annual change in return on assets (ROA) for up to ten years prior to dividend initiation (-10 to -1) and up to ten years after dividend initiation (+1 to +10). The average change is defined as an *arithmetic average* of changes in all firms' ROA in each year. The table also reports the change in Year 0, which is the base calendar year in which dividend is initiated.

We find that unadjusted average ROA1 (EBIT/Total Capital) for dividend-initiating firms averages 12.8% from years -10 to -5. ROA1 starts rising from year -4 on, peaking at 22.0% in year 0, when dividend is initiated. ROA1 declines monotonically from year +1 until year +8 when it is 13.9%. This trend is also observed for the median firm where ROA1 increases to 19.3% in year 0 from 14.9% in year -5 and declines to 13.5% in year +10. The profitability trend is similar for industry-adjusted return on assets. We observe that this measure increases from year -6 (at -5.4%) to year +1 (at +3.2%) and declines thereafter. This measure for the median firm behaves similarly, increasing from -7.0% in year -6 to +1.8% in year +1.

Observed trends for alternate definition of return on assets (operating income/total assets) are similar though somewhat less pronounced. ROA2 averages 13.8% from years -10 to -5. ROA2 starts rising from year -4 on, peaking at 20.5% in year 0, when dividend is initiated. ROA2 declines monotonically from year +1 until year +8 when it is 14.9%. This trend is also observed for the median firm where ROA2 increases to 18.7% in year 0 from 14.0% in year -6 and declines to 13.8% in year +7. This trend is similar for industry-adjusted ROA2, which increases from year -8 (at -6.9%) to year +1 (at +3.4%) and declines thereafter. This measure for the median firm behaves similarly, increasing from -5.4% in year -9 to +1.9% in year +1.

An alternative way of assessing profitability trends is to analyze if dividend initiation implies a permanent change in ROA. If this were true, the average ROA for periods preceding dividend initiation should be higher than the average for succeeding years. We examine changes in average ROA in Table 10. The first five columns report average ROA of years -10 to -6, years -5 to -1, year 0, years +1 to +5, and years +6 to +10. If dividend initiation signals permanent decline in firms' ROA then we should find increasing negative differences in ROA in ascending five-year bands. Subtracting average changes in the past from average changes in the future controls for any drift in the changes and is a way of controlling for expected ROA changes.

The five-year averages imply permanent reductions in firm profitability in years succeeding dividend initiation. Average ROA for the period $(-5, -1)$ is lower than for year 0 period years +1 to +5 by 5.4% and is statistically significant at the 1% level. The average ROA for period $(+1, +5)$ is lower than for year 0 by 5.2% and is statistically significant at the 1% level. These observations are similar for both definitions of ROA for adjusted and unadjusted measures and strongly establish that firm profitability is on a rising trend leading up to dividend initiation and then on a declining trend for the succeeding five years. Differences in five-year time series averages for other periods establish that there is permanent and significant reduction in firm profitability after dividend initiation. The differences are similar for the median firm in the sample. It is also worth noting that ROA in year 0 is the highest of any of the five-year averages, and the differences are statistically significant for all five-year averages at the 1% level.

3.2 Variability of ROA

We analyze the volatility of ROA after dividend initiation. We calculate the standard deviation of the ROA for years -10 to -1 and then for years 0 to 10 . Panel A of Table 4 summarizes the statistics of the standard deviation of ROA before and after dividend initiation. Apparently the distribution of standard deviation of ROA is skewed, which somewhat weakens the reliability of inference that we are able to draw from the standard parametric tests. We use distribution-free non-parametric tests (sign test and two-tailed Wilcoxon rank test) to compensate for this problem. Both tests reject the null hypothesis at the 1% significant level and confirm our expectation that volatility of ROA declines after dividend initiation.

3.3 Changes in Financial Leverage

Changes in a firm's financial leverage leading up to and after dividend initiation should reflect managers' comfort regarding the firm's financial risk.¹⁷ It would be logical to assume that managers would elect to increase financial leverage if they expect future earnings variability to decline. Managers may also increase leverage in order to arrest the decline in return on equity as a result of declining profitability. This is because higher leverage can have a direct positive effect on stock prices (more on this in Section 4).

Table 5 reports the levels of financial leverage of sample firms on a book and market leverage basis.¹⁸ The results indicate that there is a decline in the book leverage ratio for the ten years leading up to the year in which dividend is initiated. After dividend initiation, however, book leverage increases for five years and then levels off for years +6 to +10. This leverage trend is similar for the median firm in the data set.

Panel A reports financial leverage on a book capitalization basis for firms in the sample. We find that the average leverage for firms that initiate dividends declines from year -10 to year 0 from 38.2% to 27.8%, but reverses this trend in succeeding years, increasing to 35.2% in year +7. The leverage for median firm follows a similar trend, declining from 36.0% in year -7 to 22.6% in year 0 and then increasing to 33.5% in year +7.

The trend is similar for financial leverage measured as a ratio of debt to total market capitalization. We find that the average market leverage for firms that initiate dividends declines from year -10 to year 0 from 29.2 % to 20.4%, but reverses this trend in succeeding years, peaking at 28.4% in year +7. Leverage for the median firm follows a similar trend, declining from a high of 25.9% in year -6 to 12.7% in year 0 and

¹⁷ This assumes that managers have the ability to issue debt and increase financial leverage of the firm implying that the firm has both the capacity to issue debt (from a balance sheet perspective) as well as access to capital markets. Clearly this would not be the case for all firms in the data set.

¹⁸ Defined as the sum of book values of interest bearing short-term and long-term debt to the sum of interest bearing short-term & long-term debt and the book (market) value of equity.

increasing in subsequent years to a high to 24.2% in year 6. The industry adjusted market leverage ratios for average and median firms exhibit a similar trend – declining in periods leading up to and including dividend initiation and then increasing in subsequent years.

Similar to the analysis conducted for ROA, we observe if dividend initiation implies a permanent change in financial leverage. We examine changes in average leverage in Table 10. The first five columns report average leverage for years –10 to –6, years –5 to –1, year 0, years +1 to +5, and years +6 to +10. If dividend initiation signals permanent increase in firms’ leverage then we should find positive differences in leverage in ascending five-year bands.

The five-year averages imply permanent increase in leverage in the years succeeding dividend initiation. The average book leverage ratio for period (–5, –1) is higher by 6.5%, compared to that for year 0 and the difference is statistically significant at the 1% level. Leverage creeps up after dividend initiation, however, and we find that the average unadjusted and adjusted book leverage ratio for period (+1, +5) is higher than for year 0 by 3.0%. These observations suggest that firm leverage is on a declining trend leading up to dividend initiation and then on a rising trend for the succeeding five years. The results are similar for industry-adjusted leverage for pre- and post-dividend initiation periods.

We find that results are similar for unadjusted and industry-adjusted market leverage. The average market leverage ratio for period (–5, –1) is 6.3% higher compared to that for year 0 and the difference is statistically significant at the 1% level. Market leverage also creeps up after dividend initiation and we find that the average unadjusted and industry-adjusted book leverage ratio for period (+1, +5) is higher than for year 0 by 3.5%.

3.4 Changes in Capital Expenditures

Trends in capital expenditures before and after dividend initiation can be studied in relation to several firm variables: productive assets; operating cash flow generated by a firm’s assets; revenue; and profitability. We study the ratio of capital expenditures to

productive assets and the ratio of a firm's operating cash flow to capital expenditures in order to evaluate management decisions regarding dividend initiation and post-initiation payout policy.

Changes in the ratio of capex to total assets in relation to a firm's maturity do not provide clear inferences because capital expenditures are reported on a consolidated basis and firms do not generally provide information for capital spending on maintenance, replacement, or growth. A declining capex ratio most likely indicates that a firm is reducing its capex in relation to assets. But this ratio could also decline if the firm's assets are of more recent vintage and do not require as much maintenance capex as before. Moreover, the ratio of capital expenditures to assets is not a precise indicator of a firm's financial flexibility and its ability to pay dividends.

A decline in this ratio is not necessarily the result of declining capital expenditures. It could be the result of slower asset depreciation rate if the asset base is of older vintage and has been largely depreciated, and any recent vintage assets have a slower depreciation rate. Because of this factor, the implication of declining capex is that the firm is maturing may not be entirely accurate. Similar arguments could be made with respect to the applicability of this ratio if a firm's asset base is becoming more efficient or productive and requires lower maintenance capital expenditures.

Our view is that the ratio of free cash flow to capital expenditures is a more accurate indicator of a firm's maturity. While this ratio also suffers from some of the drawbacks mentioned above, it can result in stronger inferences. For instance, a rising free cash flow to capital expenditure ratio would indicate that the firm is maturing because capital expenditures are lower. But this could also be the case if cash flow from previous capital investments is outpacing capital expenditures and vice versa.

A summary of findings from the analysis of trends for capital expenditures to total assets ratios is provided in Table 4. We observe that this ratio declines from 9.4% in year -9 to 6.3% for year +10. This decline is also observed for the median company for which the

ratio declines from 6.6% to 4.5% over the same period. We also observe that, around the year of dividend initiation, there is a break in the trend (similar to other firm parameters in the analysis). In year +1, +2 and +3 this ratio increases to 8.0%, 8.3%, and 7.7% before resuming its long-term declining trend. This is also observed for the median firm with values of 5.7%, 5.8%, and 5.6% in years 0, +1, and +2 respectively. These observations are consistent with the results of Grullon, Michaely and Swaminathan (1999) that firms that increase dividends significantly reduce their capital expenditures.

From Table 10 we observe that the unadjusted five-year averages for capital expenditures to total assets ratio remain relatively stable. During years +5 to +1 this ratio is lower than for the time period between years -5 to -1 by 0.2%, and is not statistically significant at the 10% level. The difference between years (+6, +10) and (-5, -1) is -1.3% and is statistically significant at the 1% level. The differences are similar for industry adjusted averages. These results suggest that firms that initiate dividends are entering a maturity phase and their investment opportunities relative to their existing asset base are declining.

We examine free cash flow to capex ratio to confirm this hypothesis. If dividend initiating firms are indeed entering maturity then we should observe that their cash flow relative to capital expenditures is increasing as well. Panel A of Table 5 reports the ratio of free cash to capital expenditures of dividend initiating firms over the period 1980-99. We find that the average ratio of free cash flow (FCF1) to capital expenditures increases from 147.7% in year -10 to 312.4% for year 0, and then declines to 232.1% in year +10. This trend is also observed for the median firm for which the ratio increases from 128.2% in year -10 to 206.8% in year 0, and then decreases to 166.3% in year +10.

These observations suggest that there are two distinct phases of the trend in free cash flow to capital expenditure ratio. If it is assumed that an increase in free cash flow signifies maturity, then the implication from these observations is that firms are progressively maturing until they initiate dividends. The decline in this ratio after dividend initiation implies that there is a reversal in this trend. This observation does not

support the maturity hypothesis suggested by Grullon, Michaely and Swaminathan (1999).

To further test the relationship between a firm's cash flow and its capital expenditures, we use an alternative definition for free cash flow (FCF2) given as (EBITDAR – Taxes) and conduct similar analysis of the ratio of cash flow to capex. The results are reported in Panel B of Table 5 and show similar declining trends in cash flow to capex ratio with a significant increase around the year in which dividend is initiated.

Similar to the analysis conducted for ROA and leverage, we attempt to analyze if dividend initiation implies a permanent change in free cash flow. We examine changes in average cash flow in Table 10. The five-year averages imply an increase free cash flow for the five-year time period five years before and after dividend initiation. The average FCF1/CPX for years –10 to –6 is 167.2% vs. 223.3% for years + 6 to + 10. This difference is similar for unadjusted and industry-adjusted ratios for both measures of free cash flow. This observation suggests that firms enter a maturity phase after dividend initiation. However, comparisons of averages for five-year periods closest to dividend initiation suggest that free cash flow increases in the successive five year periods prior to dividend initiation, decreases during the first five year period after dividend initiation and stabilizes during the second five year period after dividend initiation. The results are similar for industry-adjusted leverage for pre- and post-dividend initiation periods.

The evidence so far suggests that firms that initiate dividends indeed appear to be entering maturity, except for the contradictory indication from the declining trend in free cash flow to capex ratio. This ratio is the strongest and most relevant indicator of firm maturity because it suggests that firms continue to find investment opportunities and make capital expenditure outlays after initiating dividends.

3.5 Changes in Cash and Marketable Securities

Holding cash and cash equivalents on balance sheet provides working capital and insulates the firm against market and other shocks. However, there is a net cost to maintaining cash on the balance sheet. This is the difference between the yield earned on investing cash on overnight or risk free instruments and the cost of holding that cash – a blend of cost of debt and equity. In general, firms' cash holdings are a function of expected capital expenditure outlays, the need for maintaining a liquid balance sheet and cushion against revenue cyclicality, timing differences between receivables and payables, demand shocks, and the risk of losing access to capital markets.

Changes in cash holdings over long periods of time could occur because of three principal reasons: (i) Managements' relative comfort regarding the need for holding large cash balances as a result of greater predictability regarding the timing of cash generation and stronger access to external short-term sources of cash; (ii) Lower capital expenditure outlays and associated payments; or (iii) Constraints that force firms to hold lower amounts of cash on their balance sheets.

Table 8 reports the level of cash and cash equivalents on the balance sheets of dividend initiating firms. We observe that average cash and cash equivalents as a ratio of firms' assets increase from 13.2% in year –10 to 15.9% in year 0, and decline to 11.8% in year +10. The median firm exhibits a similar trend – declining from 8.8% in year –10 to 5.7% in year +10. The industry-adjusted ratio also exhibits a similar trend, increasing from 2.6% in year – 10 to 7.2% in year 0 and then declining in the years subsequent to dividend initiation.

Grullon, Michaely and Swaminathan (1999) suggest that these results are consistent with the idea that dividend-increasing firms have less investment needs and hence more free cash flows, and that they pay out dividends to disburse excess cash and reduce over-investment. We found earlier that dividend initiating firms generate lower levels of free cash after dividend initiation. This implies that the GMS argument that lower cash levels on the balance sheets are the results of dividend payments is not supported. Our results

support the hypothesis that subsequent to dividend initiation, managers are more relaxed about managing balance sheets with lower cash levels.¹⁹

The evidence of higher financial leverage and lower cash levels subsequent to dividend initiation can be viewed in the context of the effect of dividends on agency costs. Easterbrook (1984) states that dividends may help reduce agency costs because they force managers to raise funds in financial markets more frequently than if the firm was not paying dividends. If the evidence of increasing leverage after dividend initiation is a result of higher debt levels, the implication is that firms are accessing capital markets more frequently. In Easterbrook's framework this would imply that the necessary firm scrutiny associated with frequent capital raising leads to lowering of agency costs. The decline in agency costs also helps explain positive excess return on stocks of firms that have initiated dividends.

In Jensen's framework, agency costs are a result of imperfect monitoring of managers and possible misuse of cash. The premise is that managers with large balances of free cash may use it in ways that are not in the shareholders' best interests. In this framework, shareholders are better served if cash balances not needed for investments are minimized and dividends – which in effect extract surplus cash from management control – benefit shareholders. Our observation that cash balances of divided-initiating firms' decline over time and their leverage moves higher support this framework, suggesting that dividends are financed with excess cash and borrowings through issuance of debt.

¹⁹ We do not study pre- and post dividend initiation changes in working capital in this paper. (Working capital is defined as the difference between current assets such as inventory and accounts receivable, and current liabilities (such as accounts payable and taxes payable.) As such, change in net working capital captures the difference between accrual earnings and cash earnings. Efficient management of working capital can result from lower inventory of finished goods, shorter customer payment cycles and more generous payment terms from suppliers, and lower cash balances. Changes in working capital are the result of several factors, all of which are not necessarily under managers' discretion or control. We study changes in cash and marketable securities because it is under managers' discretion and is a contributing factor to the overall change in working capital.

3.6 Changes in Market to Book Ratios

To further study the relationship between dividend initiation and firm maturity we investigate the trend in the ratio of firms' market value of assets to their book value (a proxy for Tobin's Q) as an indication of investors' expectation of a firm's growth prospects or investment opportunities. A high market to book ratio represents investor perception that the firm has higher growth opportunities.²⁰ Table 9 reports the market to book ratio. We observe that this ratio (in percentage terms) increases from 188.7% in year - 10 to 202.4% in year 0, but then declines to 180.9% in year 8. We observe similar trends for industry-adjusted market to book ratio and five year averages.

4. Changes in Market-Specific Risk Characteristics

To examine the risk characteristics of firms prior to and subsequent to dividend initiation, we measure changes in systematic risk of equity based on the following regression model:

$$r_{it} - r_{ft} = \alpha_{-i} + \alpha_{\Delta i} D_t + \beta_{-i} (r_{mt} - r_{ft}) + \beta_{\Delta i} D_t (r_{mt} - r_{ft}) + \varepsilon_t$$

where r_{it} is the monthly return on stock i , r_{ft} is the monthly return on 1-month U.S.

Treasury bills, r_{mt} is the monthly return on the NYSE/AMEX/NASDAQ value-weighted index with dividend, and D_t is a dummy variable which is equal to 1 if $t \geq t^*$, where t^* is the month in which the dividend initiation was announced.

²⁰ Firms that have low asset values such as service industries or have a high level of leased assets are exceptions to this assumption. We assume here that the rule that applies here is that high market to book represents growth opportunities for both manufacturing and service industries. The industry adjusted ratio also compensates for any industry-specific differentials.

A window of 73 months (−36 to +36) was used to estimate the parameters of the regression model. $\beta_{.i}$ is the beta of firm ‘i’ during the three years prior to the dividend announcement and $\beta_{\Delta i}$ is change in beta after the dividend-initiation announcement. $\alpha_{.i}$ is the abnormal return or *Jensen’s Alpha* of firm ‘i’ before the dividend announcement and $\alpha_{\Delta i}$ is the change in abnormal return after the dividend announcement.

Table 11 summarizes the results of market risk and return characteristics of dividend initiating firms before and after dividend initiation. As indicated in the table, the average market beta of dividend-initiating firms is 1.18 and is significantly above one. We find that for the entire sample of dividend initiating firms, the market beta declines by 0.20, which is significant at the 1% level. The market beta for the median firm declines by 0.19, which is also significant at the 1% level.

To gauge the economic significance of the decline in risk, we compute the impact on risk premium over time. The average monthly return for the market during 1963 to 1996 is 0.43%. Using this return we can compute the decline in risk premium for dividend initiating firms. The decline in risk premium is 0.14 times 0.43 which is equal to around 0.065% per month or 0.75% a year. This level of decline in annual risk premium is economically quite significant and can result in an appreciable increase in the market value of equity. The change in both mean and median Alpha is negative and significant at the 1% level.

4.1 Information Content of Dividend Initiation

We have observed that dividend initiations signify a lower but less risky profitability for initiating firms. It is logical to expect that if investors and market participants even partially recognize this relationship, initial market reaction to announced dividend initiation should be related to expected changes in profitability and risk premium. An observed increase in stock prices or positive excess return would imply that dividend-initiating firms’ systematic risk and cost of capital should decline. We examine this

conjecture by investigating abnormal returns and changes in risk around dividend initiation announcements.

To explore this issue, we investigate market reaction of dividend initiation announcement on cumulative abnormal return of dividend initiating firms. The results from this regression are reported in Table 13. We find a strong positive relationship between dividend initiation and price reaction. In addition, there is a strong negative relationship between CAR and future changes in systematic risk or risk premium. This implies that the positive price reaction to dividend initiation is associated with a decline in systematic risk but *less so* with a decline in future profitability.

The negative relationship between CAR and future risk changes implies that expectations of a decline in the systematic risk of a firm that initiates dividends should result in a positive price reaction. However, a positive price reaction may also point to the possibility that, at the time of dividend initiation, investors do not recognize that it is a sign of decline in profitability over the long run.

We observed in Table 3 that dividend-initiating firms report increasing ROA trends between year -2 and year 0. The average annual increase in unadjusted ROA1 in these years is 0.47% and for year 0, there is an increase of 2.1%. Investors may project the observed increase in profitability and cash flow into the future and consider dividend initiation as an indication that the firms' positive performance and prospects are likely to continue in last for the foreseeable future. As profitability of a dividend initiating firm resumes its long-term decline, investors gradually lower their expectations.

The other reason for investors' positive view of dividend initiation could be that they expect a decline in agency costs that could be associated with managers' misuse of large amounts of free cash flows. Dividend initiation can provide comfort to investors that managements are more inclined to pay out excess cash to shareholders instead of investing in negative NPV projects.

4.2 Post Dividend-Initiation Announcement Drift

Because investors may not realize the positive *and* negative implications of dividend initiation, stock prices may not fully reflect long-term negative implications of dividend initiation for future profitability, as well as positive implications for future risk. This would suggest that over the long-term, stock prices of dividend initiating firms are negatively influenced as investors learn more about declining profitability and positively influenced as investors learn more about decline in risk. There are two opposing effects on stock prices and it is not certain *ex ante* which effect will have a stronger influence.

Table 13 reports pre- and post-dividend initiation returns. We find that stock prices of firms that initiate dividends experience negative drift (compared to a market proxy) during the five-year period after initiation. This would suggest that over the long run, positive effects of decline in risk and agency costs do not offset negative effects of changes in profitability. Further research is required to segregate the effects of dividend initiation on stock returns and to gain additional insights into how investors respond to the implications of dividend initiation for future firm performance and risk.

5. Discussion of Results and Conclusions

Our results appear to reject the implications of the positive signaling model as applied to dividend initiations. We find that firm profitability decreases after dividend initiation, which is contrary to the predictions of signaling models that predict improvements in firm profitability. We also find that the timing of dividend initiation coincides with the period during which profitability and other performance measures are strongest for firms in the data set. In a signaling model, this would imply that firms that initiate dividend may be mimicking future prosperity on the basis of past performance. The signaling model further predicts that firms that mimic the performance of true “good” firms are punished as the market recognizes the false signal. We find this to be the case, as stock prices of dividend initiating firms generate negative returns for five-year periods after dividend initiation.

Our results point to a stylized model of dividend initiation. As managers observe that firm prospects (both profitability and growth) are improving and appear to be sustainable, they commit to periodic cash out flow in the form of dividends. They wait for the right opportunity to announce dividend initiation i.e., when cash flow is high, profitability is strong and the firm is making significant investments and capital expenditure outlays. Managers may initiate periodic dividends for several reasons: to attract a new investor clientele; to act proactively to assure investors who may be concerned about agency problems as the firm generates increasing amount of excess cash that it may not have opportunities to invest; and to signal that they are acting in the interest of shareholders.

As dividend initiation is announced, investors read it as a positive signal, most likely a combination of expectation of continued high profitability and reduction in agency costs. As the euphoria of the period around dividend initiation subsides, investors realize that the firms' investment opportunities are shrinking and lower their expectations for earnings growth, resulting in lower market-to-book ratios.

On their part, managers compensate for lower earnings variability and stock prices by raising financial leverage of the firm. Indeed, higher leverage may have mitigating effect on agency costs because it necessitates frequent trips to capital markets for raising debt.

Our results suggest several avenues for further research. Managers' motivations for initiating dividends should be studied in greater detail – whether they are: (i) True indications of firms' transition from “growth” to “maturity phase;” (ii) Indications of managements' belief that firm performance will continue the strong trend realized immediately prior to dividend initiation; or (iii) “Window dressing” on part of managements to enhance the firms' positive perception generated by strong performance prior to dividend initiation. The maturity hypothesis (which implies that firms that initiate dividends are maturing) could also be further investigated by segmenting firms in the sample by industry, classifying them by relative maturity and studying pre- and post-dividend-initiation trends. Analysis of firms' follow through with dividend

increases/decreases would be helpful in understanding managers' motivations behind dividend initiations.

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