Repeated Dividend Increases: A Collection of Four Essays

by

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CERTIFICATE OF ORIGINAL AUTHORSHIP

I certify that the work in this thesis has not previously been submitted for a degree nor has it been submitted as part of requirements for a degree except as fully acknowledged within the text.

I also certify that the thesis has been written by me. Any help that I have received in my research work and the preparation of the thesis itself has been acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

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Abstract

This thesis investigates firms with patterns of repeated cash dividend increases to answer two research questions. First, are firms rewarded for this particular type of dividend policy, and second, is there any evidence to support the hypothesis that the stock market learns to anticipate a dividend increase based on past history? Dividends are a particularly good corporate action to study because firms tend to increase dividends over time, and at regular intervals. This repetition leads to patterns of regularly-occurring dividend increases, which in some cases can extend for many decades. The analysis is presented in a collection of four essays. The first essay documents the prevalence of firms that sustain a pattern of consecutive annual dividend increases. These firms attract a stock market premium, providing evidence to support the belief that a steady dividend policy is rewarded. The next two essays further explore firms with a habit of regularly increasing the dividend to determine if the market eventually learns to expect future dividend increases. The second essay studies U.S. firms and Australian firms are investigated in the third essay. For both countries the stock market reaction to each consecutively-numbered increase within a pattern is different across each increase, with a smaller stock price reaction the more often the increase is repeated. The fourth, and final, essay examines firms that fail to continue an established dividend-increase pattern. A firm may be expected to maintain the same dividend-increase schedule, and the expectation should be higher the longer the length of the established pattern. When the pattern is interrupted and the expected increase does not eventuate, the stock market reaction is expected to be more pronounced the longer the length of the established pattern. The results presented in the last three essays provide evidence consistent with the market learning hypothesis. Combined, the four essays suggest that the stock market evaluates the information contained in a dividend announcement in conjunction with the length and pattern of past dividend payments.

Chapter 1

Introduction

1.1 Thesis Outline

Managers follow a carefully-crafted dividend policy that is motivated by the belief that its stockholders prefer a smoothly-increasing dividend path rather than a dividend path consisting of unpredictable or volatile changes. To maintain a smooth record dividends are increased judiciously and only when managers are confident that the higher dividend can be maintained. The caution that is associated with the decision to increase the dividend also helps avoid the need to cut the dividend and over time results in the evolution of a pattern of gradually increasing dividends.

A long-standing belief in the dividend literature is that firms are rewarded for a stable dividend policy. The large number of firms that follow a policy of increasing the dividend at regular intervals is consistent with this belief. However, there is no empirical evidence to support the reward hypothesis. One way that a reward may manifest itself is if firms that consistently increase the dividend attract a stock market premium. This thesis contributes to the literature and studies firms with a record of dividend increases to determine if a premium exists.

Another generally-accepted hypothesis in the dividend literature is that managers use dividend changes to convey their private information to the stock market. Empirical evidence consistently supports this hypothesis and shows that dividend increase announcements are associated with positive abnormal returns. This finding suggests that an increase is a signal that the firm's prospects are favourable. However, existing research does not consider if the

informativeness of the signal supplied by a dividend increase changes with each successive dividend increase. The objective of this thesis is to investigate the stock market response to dividend changes for firms with a history of regular dividend increases. Existing research tends to consider dividend changes in isolation, without regard to the prior dividend history. However, because a dividend increase is a carefully considered event, the market reaction to each dividend increase may not be the same because of the prior dividend history and an implied market expectation. Once a dividend-increase pattern is established, the knowledge that firms tend to maintain the same dividend-increase schedule may lead to subsequent increases being fully anticipated. Consequently, when an increase is announced it may be associated with a smaller or no stock price reaction compared to increases that are less anticipated. To address these gaps in the literature this thesis contains a collection of four essays that investigate the central research question of how the market response to a dividend announcement is related to the prior dividend history.

Chapter Two (Essay 1) studies long-term stock returns following dividend increases announced by U.S. firms. Managers of dividend-paying firms express a desire for dividend stability, or smoothness, possibly due to a tendency to be conservative in setting future expectations. While time-series dividend patterns follow a smooth pattern that is shaped by managers' cautious approach to setting dividends, what truly motivates firms to smooth dividends is not resolved in the literature. One explanation for dividend stability is the belief that it is associated with a market reward. To investigate the hypothesis that dividend stability is rewarded in the market, this essay inspects firms' dividend histories to identify particularly stable dividend policies that consist of consecutive annual dividend increases. We document positive and significant abnormal returns for the twelve months following the first through to the fifth dividend increase in a series of increases. This finding confirms that a steady dividend-increase policy attracts a market premium but the reward dissipates with each

successive increase and completely disappears after five years of these stable dividend policies. We contribute to existing research and show that dividend consistency is rewarded and that the magnitude of the market reward depends on how often the dividend has been increased in the past.

The remaining three essays explore the relationship of the short-term stock market reaction around dividend announcements to the prior dividend history. Chapter Three (Essay 2) investigates returns around dividend increase announcements by U.S. firms partitioned by the number of prior consecutive dividend increases. We identify firms with a pattern of consecutive annual dividend increases and find that abnormal returns are significantly positive for the first and second dividend increase only. Our results suggest that, by the third consecutive increase, the market has learned to expect further increases and so abnormal returns are not significant, even after controlling for variables that are correlated with the length of the dividend-increase pattern. These findings are robust and provide further evidence that, consistent with other types of repeating corporate announcements, the stock market learns to anticipate an event depending on how often the event has already occurred.

Chapter Four (Essay 3) studies short-term market returns around consecutively-numbered dividend increases in the Australian market, providing a contrast to the experience for the U.S. market investigated in Chapter Three. We use a sample of dividend increase announcements occurring between 1994 and 2013 and explore if the information conveyed by a dividend announcement depends on the dividend track record. After controlling for the information conveyed by the contemporaneously-announced earnings, and other factors including the size of the increase, the first three dividend increases are associated with significantly positive abnormal returns and subsequent increases are generally not significant. Even though the U.S. and Australian markets have different dividend payment frequencies and announcement environments, both countries' capital markets display evidence of

decreasing returns around successive dividend increase announcements suggesting that dividend increases are eventually anticipated.

Chapter Five (Essay 4) studies U.S. firms and examines the market reaction to announcements that lead to a break in a regular dividend-increase pattern. In contrast to the three prior essays that examine continuations of a consistent dividend-increase pattern, this essay explores the consequences of interrupting a dividend-increase pattern. Existing literature shows unchanged dividends are associated with insignificant announcement-period stock returns. There are, however, some cases where an unchanged dividend may have information content and provide information about a firm's prospects. We identify firms with a track record of one or more consecutive dividend increases that occur in the same fiscal quarter of each year but then in the same quarter of the following year announce an unchanged dividend. We find these 'failure-to-increase' dividends are associated with significantly positive abnormal returns that are greater in magnitude the longer the prior dividend-increase track record. One explanation for the positive reaction is that investors perceive the failure to maintain the dividend-increase pattern as a decision to profitably invest the funds that would otherwise have been used to increase the dividend. We also find an association with a reduction in earnings, suggesting that the decision to maintain the dividend at the same level may be perceived as a signal that management considers the decline in earnings as temporary and not necessitating a dividend cut. The findings for this special case of dividend announcements provide further evidence that expectations and market reactions differ depending on the prior pattern of dividend payments.

The practice of grouping all dividend announcements without regard for the prior dividend history implicitly assumes that the market reaction to each announcement is homogenous. The results from each chapter indicate that this implicit assumption does not hold in both the U.S. and Australian markets. This thesis contributes to the literature and

explores the hypothesis that the market is sophisticated and judges a dividend announcement not in isolation but as the latest piece of an ongoing dividend portrait. Each essay investigates the role of the prior dividend history from a different perspective and shows that the market reaction to a dividend announcement is systematically related to the number of times the announcement has already occurred. The results are intuitive and support the hypothesis that the stock market learns to anticipate an increase based on past dividend behaviour.

Chapter 2

The Dividend-Increase Repetition Reward

2.1 Introduction

Managers of dividend-paying firms surveyed by Brav et al. (2005) report that the most important consideration is to maintain a consistent dividend policy. This claim may be motivated by a belief among managers that the stock market rewards firms that follow a policy of gradually increasing the dividend (Lintner, 1956). We investigate this belief by exploring whether firms with a consistent dividend policy attract a premium. Dividend increases are a recurrent event. When a dividend is increased, there is a high probability of another increase in twelve months' time (Bessembinder and Zhang, 2014). Furthermore, inspection of firms' dividend track records reveals a large number of firms with long track records of increasing the dividend every year. This empirical observation is consistent with the views also expressed in Lintner's survey that although firms pay dividends quarterly, they tend to confine increases to an annual frequency, as opposed to a quarterly increase cycle. For example, consider the following announcement by TJX Companies, Inc., "I am pleased to report that our Board of Directors has approved this 27% increase in our quarterly dividend, which reflects our confidence in the business and marks our 15th consecutive year of dividend increases." (TJX Companies, 2011). Although future cash dividends are uncertain, dividend consistency implicitly manages investors' expectations. The firm's publicity of the length of the dividend track record and a habit of maintaining consistency with the well-established policy of increasing the dividend in the same quarter suggests that the firm is likely to maintain the same policy in the future.

Consistency of dividend increases indicates that managers choose this pattern deliberately. The fact that we identify large number of firms with a long track record of consistently increasing dividends suggests that managers believe there is some benefit to embarking on, and even extending, a well-established dividend increase pattern. For a sample of firms that exhibit dividend consistency we calculate abnormal returns following a dividend increase by using a matched-firm analysis. If a consistent dividend policy is rewarded then we would expect firms with this policy to display a stock market premium. Furthermore, examining changes in the size of the premium following each successive dividend increase can reveal whether firms continue to be rewarded the longer they maintain a track record of dividend-increase consistency.

Firms with a track record of consistently increasing earnings receive market rewards (Barth et al., 1999; Myers et al., 2007). Myers et al. also document that when firms announce an earnings decrease causing the track record to terminate, market returns are more negative the longer the track record length. To avoid announcing an earnings decrease managers use a variety of accounting tools at their discretion to manage earnings and consequently sustain the record of earnings-increase consistency. In contrast, dividends are paid in cash and not subject to accounting manipulation. It is well-known that firms follow a carefully crafted dividend policy to ensure that increases can be maintained and decreases avoided. For example, Brav et al. (2005) discover that a majority of managers would not cut the dividend to finance a valuable project, but instead raise new capital, demonstrating firms' aversion to dividend cuts. Analysing the returns associated with dividend consistency sheds light on the relative importance the market attaches to earnings consistency compared to dividend consistency.

We investigate whether the capital market rewards firms that sustain a consistent dividend policy. Specifically, we seek to answer the question: Do firms with a history of

repeated dividend increases earn long-term positive abnormal returns, and if so, how long do the returns persist? We identify firms with a track record of consecutive once-a-year dividend increases and then measure abnormal returns for the five years following each successive dividend increase announcement within the track record. Our sample firms exhibit significantly positive abnormal returns following each of the first five annual dividend increases. This result confirms the belief that a consistent dividend track record is rewarded with a market premium. However, the reward does not endure but lasts for a limited time only.

This essay contributes to the dividend literature by demonstrating that firms with a consistent dividend policy attract a market premium. The remainder of the essay is laid out as follows. Section 2.2 explains how our investigation of repeated dividend-increase patterns builds on the existing dividend literature, and relates our analysis to other repeating corporate events such as earnings increases patterns. The construction of our sample of firms with a record of dividend consistency is contained in Section 2.3. We use a matched-firm approach to calculate abnormal returns and in Sections 2.4 and 2.5 we explain the identification of a matching firm and the calculation of annual buy-and-hold returns, respectively. In Section 2.6 we present evidence that positive and significant annual abnormal returns are confined to the first five consecutive dividend increases. Section 2.7 demonstrates that the positive abnormal returns following consistent dividend increases are not explained by the returns that are known to accrue to firms with a corresponding record of consistent earnings increases. Section 2.8 concludes the essay.

2.2 Related Literature

2.2.1 Stock Returns Following Dividend Increases

Our study contributes to the understanding of dividend-increase repetition and long-term returns, an issue that existing studies have not investigated. We draw motivation from existing studies of dividend changes and from analysis of other repeated corporate events such as earnings increases. For example, Benartzi et al. (1997), and Grullon et al. (2002), each using a slightly different technique, report positive and significant abnormal returns in the three-year window following a dividend increase. However, these studies are unable to reveal whether positive abnormal returns are associated with each dividend increase in a dividend track record. Our investigation builds on the analysis of Benartzi et al. but with two important differences. First, by pooling all dividend increases together Benartzi et al. are unable to explore the relevance of the dividend track dividend prior to an increase. Although they document positive returns subsequent to an increase suggesting firms continue to earn a positive reward for several years after the increase, it is unclear if firms are rewarded for multiple increases. By counting the number of dividend increases that precede an increase we can discover whether the market rewards differ with each consecutive dividend increase. We isolate one particular, and common, dividend track record consisting of once-a-year dividend increases and calculate the length of the prior track record. A second key difference is that we monitor returns in the five years following each increase in the track record. This five-year post-increase interval is split into five twelve-month intervals. This way we can identify whether abnormal returns are confined to any particular post-increase year-long period. Benartzi et al. analyse returns in the three-year interval following dividend increases but do not partition the time interval. The significant returns that they observe for the three years after an increase appears to be explained by the fact that returns are significant by the end of year one. When we decompose the post-increase period into non-overlapping intervals we

observe that the significant positive abnormal returns documented by Benartzi et al. are mostly confined to each of the first two years following only the first five consecutive dividend increases.

2.2.2 Stock Returns and Earnings Track Records

Studies of earnings patterns by Barth et al. (1999) and Myers et al. (2007) reveal that long-term abnormal returns accrue to firms with a record of at least five consecutive years of earnings-per-share increases. Firms reporting earnings that repeatedly equal or exceed analysts' earnings forecasts also earn market rewards (Bartov et al., 2002), and Kasznik and McNichols (2002) report that the size of the market reward decreases the more often the firm has a history of announcing earnings that exceed forecast earnings. Myers et al. provide evidence that managers engage in earnings management in order to maintain the rewards associated with long earnings patterns. In the case of dividends, however, a carefully-managed pattern of steady dividend increases is an explicit objective by managers (Lintner, 1956 and Brav et al., 2005) but the reason *why* firms maintain a policy of regular dividend increases is not clear. Interestingly, even though Barth et al. themselves state that "Patterns of increasing dividends also could be associated with market rewards" there is no current study that investigates this idea.

Our examination of abnormal returns for firms with patterns of repeated dividend increases employs a similar technique to calculate abnormal returns as the examination of earnings increase sequences in Myers et al. (2007), but avoids the look-ahead bias inherent in their sample. They study the next five years of earnings-per-share figures to build a sample of firms with non-decreasing earnings and *then* measure abnormal returns for the twelve months following each earnings increase. Our sample of dividend-increasing firms avoids this bias

because we use information that is only known at the time of each dividend-increase number in a track record.

2.2.3 Repeating Corporate Events

The concept that stock returns following a dividend increase may be different depending on the dividend track record prior to the increase is inspired by research showing the short-term stock market reaction to an event's announcement is different depending on the frequency of prior occurrences of the event as in the case of stock splits (Pilotte and Manuel, 1996), rights issues (Iqbal, 2008) and seasoned equity offerings (D'Mello et al., 2003). These studies report that the abnormal returns are largest around the first announcement of the event and with each subsequent announcement the abnormal returns decay towards zero.

Early studies (e.g., Pettit 1972; Aharony and Swary 1980; Eades et al. 1985) report significant short-term abnormal returns around dividend change announcements. However, as Charest (1978) and Dielman and Oppenheimer (1984) point out, the expectation of a dividend change is different depending on the firm's prior dividend history.

The repetitive nature of dividend announcements is used by Baker and Wurgler (2012) to argue that investors use the sequence of past dividends as a reference point to benchmark against the current dividend. In this setting, each announcement within a streak of constant quarterly dividends reinforces the dividend's level in investors' memory. Therefore, any changes in the dividend level are newsworthy events, and abnormal returns are larger the longer the streak of unchanged dividend amounts. Like us, Bessembinder and Zhang (2014) also recognise that dividend increases are often repeated in the future. They report significant positive abnormal monthly returns for firms with a high probability of a dividend increases.

Our analysis reveals that the probability of a dividend increase becomes larger for longer dividend-increase track records, and that positive abnormal returns do not follow all dividend increases.

2.2.4 Dividend Track Records

DeAngelo and DeAngelo (2007) suggest that the presence of a "strong" track record indicates a willingness to continue paying dividends into the future. Although DeAngelo and DeAngelo do not define "strong" we propose that regular quarterly dividend payments with a pattern of regularly-repeated dividend increases represents one particular type of dividend policy that may be considered "strong".[1] If the capital markets judge a track record to be important, then perhaps a "strong" track record is even better. This paper contributes to the literature and demonstrates that there is a tangible reward for firms that maintain a strong dividend track record. Our sample firms increase the dividend in the same quarter each fiscal year and we examine the returns following each dividend increase for firms with a track record of one dividend increase up to a ten-year track record of consecutive dividend increases.

2.2.5 Comparison of Results with Existing Literature

The abnormal returns of approximately three to four percent per annum for each of the first three years of a track record that we document are substantially higher than the short-term abnormal returns for the two or three days around dividend increases of approximately one to two percent (e.g., Aharony and Swary 1980; Dielman and Oppenheimer 1984; Lang and

[1] The most stable dividend policy possible would be a history of equal-sized dividends but since managers do not express a preference for such a dividend policy, and that it could not legitimately be considered a strong policy, we do not study it.

Litzenberger 1989; Yoon and Starks 1995; and many others). Thus dividend-increasing firms continue to earn significant abnormal returns for the remainder of the year even after considering the portion of the annual return that is contributed by the short-term dividend-increase announcement return.

It is also unlikely that our results are simply a manifestation of the higher abnormal returns that accrue to firms with a five-year track record of annual earnings increases documented by Barth et al. (1999), or those with a track record of twenty consecutive quarters of non-decreasing earnings studied by Myers et al. (2007). By the fifth consecutive annual dividend increase, approximately thirty percent of the dividend-increasing firms also maintain a corresponding track record of annual earnings increases. Since most of the firms with longer dividend track records are not the same firms as those that also maintain long earnings track records we can be confident that the rewards to regularly dividend-increasing firms that we identify in this paper are not simply the same rewards that are earned by regularly earnings-increasing firms. Nevertheless, we conduct a more detailed analysis of the potential overlapping abnormal returns between earnings track records and dividend track records. Our sample firms' earnings patterns are typically characterised by short sequences of consecutive earnings increases and very few long sequences. In some ways, this finding is not surprising because firms change dividends only when earnings are expected to permanently change (Lintner, 1956). Thus the short earnings sequences that result as a consequence of an interruption in a pattern of consecutive earnings increases support the contention that dividends are resistant to temporary earnings decreases.[2]

[2] However, rather than dividend changes being a forward-looking indicator of future earnings as suggested by Lintner's (1956) survey participants and first tentatively verified by Watts (1973), more recent empirical evidence disputes the view that managers use dividend changes as a way to signal their belief about future earnings and indicates that dividend changes more reflect present earnings, and to some extent, past earnings (Benartzi et al., 1997; Koch and Sun, 2004). For initiations and omissions, which are the more extreme version of increases and decreases, respectively, Healy and Palepu (1988) report that initiations are followed by future earnings increases and omissions are followed by decreased future earnings.

Our results confirm a long-standing belief that firms earn a reward for a consistent dividend policy. However, the reward does not endure. We show that a statistically significant reward is confined to the first increase through to the fifth successive increase only.

2.3 Sample Construction

We use the Center for Research in Securities Prices (CRSP) database and extract all taxable quarterly dividends (i.e., CRSP distribution code = 1232) from 1971 to 2011 to identify instances of a dividend increase. Using the CRSP/Compustat Merged (CCM) database we then determine in which fiscal quarter the dividend increase occurs. For each dividend increase we identify the closest fiscal quarter-end that follows the dividend declaration date (i.e., DCLRDT in CRSP) and assign the increase to that particular quarter. For example, an increase that is declared between the fourth and first fiscal quarters is said to occur in the first quarter. We then identify firms that increase the dividend in a particular fiscal quarter, maintain the dividend at the new level for the next three quarters, and then increase the dividend in the same fiscal quarter of the following year, and maintain this pattern of dividend increases that occur in the same fiscal quarter up to a maximum of ten consecutive years.[3] We refer to this particular pattern of dividend increases as a 'track record' and our sample firms have a track record length ranging from one up to ten years. Figure 2.1 provides a representation of the dividend increase pattern required to qualify for a ten-year dividend-increase track record.

[3] As a technical issue, forty consecutive quarterly dividend figures are necessary to identify firms with a ten-year dividend-increase track record. The required dividends are: the three dividends before the first increase, the thirty-six quarterly dividends starting with the first increase and ending with the dividend prior to the tenth increase, and the dividend representing the tenth increase. We require that the three quarterly dividends before the first dividend are all equal to ensure the first dividend increase is not preceded by any other type of dividend change.

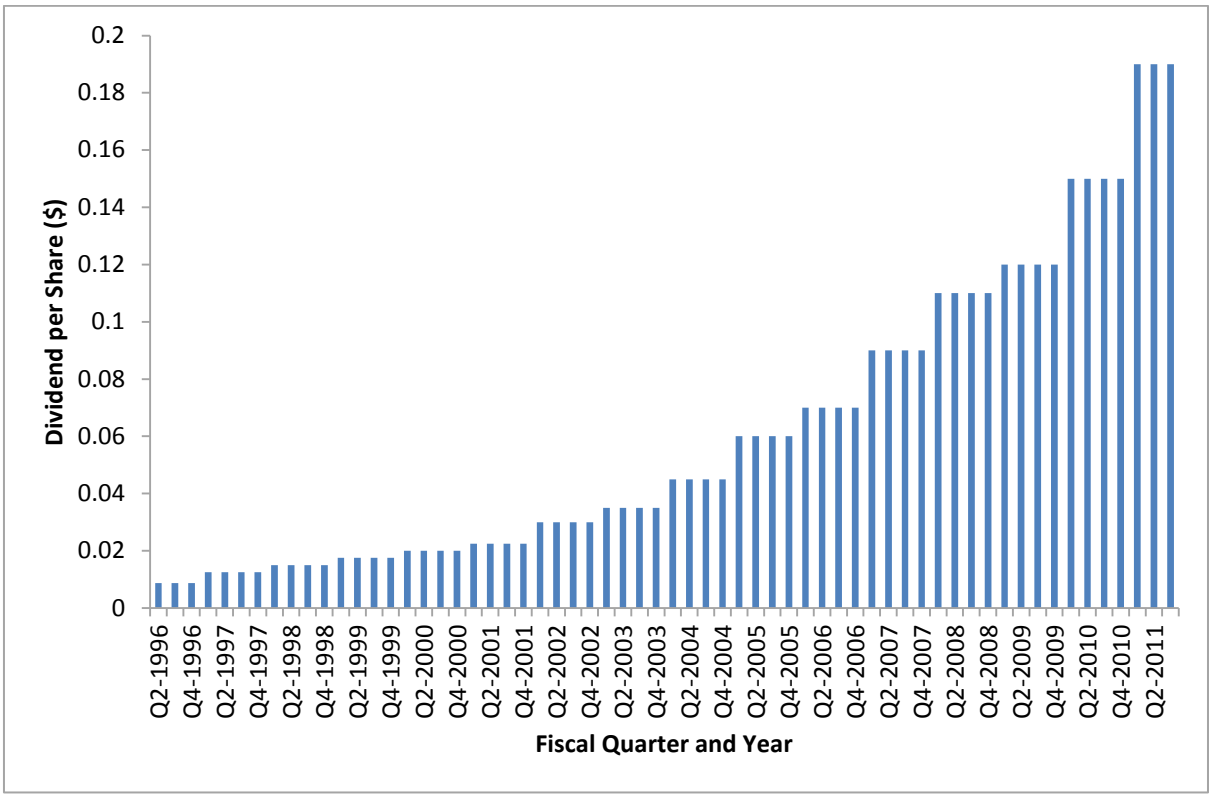
Figure 2.1
Ten-Year Track Record Dividend Payment Pattern

The timeline displays the dividend payment pattern required to satisfy the definition of a ten-year dividend track record. The first increase in the dividend from the amount D_0 to D_1 that occurs in quarter 4 is preceded by three equal-sized dividends of the amount D_0 in quarters 1, 2 and 3. The dividend is maintained at D_1 for the next three quarters (i.e., quarters 5, 6 and 7) and then increased to D_2 in quarter 8 and maintained at this level for the next three quarters. This once-every-four-quarter dividend increase pattern is repeated until the tenth dividend increase, D_{10}, representing the 40^{th} quarterly dividend.

Dividend Amount	D_0	D_0	D_0	$D_1 > D_0$	D_1	D_1	D_1	$D_2 > D_1$	D_2	D_2	D_2	$D_3 > D_2$	D_3	...	D_8	$D_9 > D_8$	D_9	D_9	D_9	$D_{10} > D_9$
Quarterly Dividend Number	1	2	3	4	5	6	7	8	9	10	11	12	13	...	35	36	37	38	39	40

Figure 2.2
Dividend History of TJX Companies, Inc.

The figure plots the adjusted dividend-per-share history of TJX Companies, Inc by fiscal quarter and year. We assign the declaration date of the dividend increase (CRSP: DCLRDT) to a particular fiscal quarter using the CRSP-Compustat Merged (CCM) database. The first dividend increase in the track record is declared on 9 April 1997 and the two immediately surrounding fiscal quarter-end dates are 31 January 1997 (the fourth quarter) and 30 April 1997 (the first quarter), and therefore we assign the dividend increase to the first quarter. Each of the fourteen subsequent dividend increases occur in early April, which remains the first fiscal quarter throughout the firm's history, resulting in a track record length of fifteen years.



We provide an example of a dividend track record in Figure 2.2, which depicts the dividend-per-share history of TJX Companies, Inc. This firm maintains a history of increasing the dividend in the first quarter of each fiscal year for fifteen consecutive years, and therefore qualifies for inclusion in our sample in each dividend-increase-number category from one to ten. Table 2.1 reports the year and the fiscal quarter of the tenth consecutive dividend increase.

Table 2.1
Fiscal Quarter of Increase for Ten-Year Dividend Track Records

The table reports the distribution of the fiscal quarter of the tenth dividend increase for firms with a track record of ten consecutive years of once-a-year dividend increases for a sample of dividend increases announced between 1971 and 2006.

	Fiscal Quarter				
Year	1	2	3	4	Total
1980	1	2	0	3	6
1981	3	3	1	1	8
1982	2	3	2	2	9
1983	8	4	1	1	14
1984	7	4	1	2	14
1985	5	3	2	3	13
1986	11	3	1	5	20
1987	8	5	1	4	18
1988	9	5	1	3	18
1989	11	6	0	3	20
1990	3	0	4	3	10
1991	4	5	3	0	12
1992	3	3	1	4	11
1993	5	3	4	1	13
1994	10	7	2	2	21
1995	6	8	5	6	25
1996	10	9	6	4	29
1997	15	3	6	3	27
1998	4	3	0	1	8
1999	3	1	0	3	7
2000	4	4	0	1	9
2001	5	1	3	6	15
2002	7	3	2	2	14
2003	6	4	1	7	18
2004	7	2	0	1	10
2005	6	4	3	5	18
2006	9	2	1	1	13
Total	172	100	51	77	400

For the 400 firms that announce a tenth consecutive annual dividend increase, the increase occurs most often in the first fiscal quarter, and often coincides with the annual meeting. This timing is consistent with firms setting the annual dividend amount for the forthcoming fiscal year after considering earnings for the prior fiscal year. By setting the dividend for the year, the quarterly dividend amount is the annual amount divided by four, yielding four equal-sized dividends spread across the fiscal year. The final year tabulated is 2006 because we calculate abnormal returns for the following five years, ending in 2011, which is the final year of our dividend sample. The longest uninterrupted track record of 42 years in our sample starts in

the year 1970 and is still ongoing as at the end of 2011, indicating that for some firms the dividend-increase habit is especially hard to break.

We examine patterns of once-a-year dividend increases for two main reasons. First, managers surveyed by Lintner (1956) state that dividends are determined annually - but paid quarterly, and second, since we examine returns for the twelve months following each increase we can be assured that there are no other dividend changes occur during this time period that may otherwise potentially bias our results.[4] Forming a sample of firms with once-a-year dividend payment patterns eliminates the possibility that the higher annual returns for regular dividend-increasing firms that we observe are driven by the abnormal returns associated with firms that announce multiple increases within a year. Our sample firms increase the dividend exactly once every four quarters.

Following the method explained in Barber and Lyon (1997) we use buy-and-hold returns rather than cumulative abnormal returns to measure long-term abnormal stock returns following a dividend increase. Specifically, we calculate abnormal returns following the i^{th} dividend increase. Their preferred method involves first matching a firm that experiences a particular corporate event to a firm that does not experience the event but has a similar size and market-to-book ratio, called the control firm. Then, the difference between the monthly compounded returns for the sample firm and the control firm is a measure of abnormal returns. For earnings patterns, Myers et al. (2007) use this method to detect positive abnormal returns for a sample of consistent earnings-increasing firms and we use a similar procedure to determine a matching firm to ultimately examine the returns that accrue to firms following a dividend increase based after considering the prior track record. We first explain the process

[4] We are able to identify just six firms in the entire CRSP database that maintain a particularly strong policy of announcing a dividend increase *every* quarter for at least ten years. Note that these six firms are not contained in our sample because we study firms with a ten-year history of once-a-year increases.

used to assign a matching firm to a dividend-increasing firm and then give details of the technique we use to calculate annual returns for both the sample and matching firms.

2.4 Control Firm Identification

For each dividend increase in our sample we identify the fiscal quarter-end date immediately prior to the declaration date of the increase and calculate the market value and the market-to-book ratio of the firm as at that date. Market value equals the product of the stock price (CRSP: PRCQ) and the number of shares outstanding (CRSP: CSHOQ), and the market-to-book ratio equals the market value divided by stockholders' equity (CRSP: SEQQ). We use quarterly data throughout this study rather than annual data so that the market value and market-to-book ratio are a more timely measure of the financial characteristics of the sample firm, and its matching firm, at the time of the dividend increase. Myers et al. (2007) measure the financial characteristics of their earnings-increase track record firms using year-end COMPUSTAT data, potentially causing their descriptive statistics to depict their sample's characteristics up to nearly twelve months before the earnings increase actually occurs.[5] We then identify a pool of potential matching firms from the CRSP universe based on two criteria: (i) its market value is between 70% and 130% of the sample firm's market value, and (ii) it does not change its quarterly dividend for the quarter preceding the sample firm's dividend increase. Then, from the pool of potential matches we identify the firm with the closest market-to-book ratio to the sample firm, and call it the control firm. Once a sample firm has been assigned a control firm, that particular control firm is then discarded from the pool of potential matches ensuring that all control firms are unique. Table 2.2 reports the market value (in Panel A) and market-to-book ratio (in Panel B) for the sample and control

[5] Our sample firms' financial characteristics are measured using accounting and financial data that is, on average, 43 days before the dividend increase is declared.

firms for the quarter prior to each dividend increase for dividend-increase record length group *i*, where *i* = 1 to 10. The following discussion focuses on the median statistic, rather than the mean because the distribution of each variable, in particular of the market value of equity, is heavily right-skewed. Around the time of the first dividend increase sample firms have a median market value of $284 million compared to their matching counterparts' median of $272 million. The difference between these two figures is not significant (*p*-value = 0.12), which is expected since the purpose of the matching process is to identify a control firm with a similar market value to each sample firm. The median market value of equity of the sample firm increases monotonically as the dividend increase track record gets longer. At the time of the tenth dividend increase sample firms' median market value has risen to $1.15 billion. These figures indicate that each time the firm extends its dividend-increase track record by one additional year the firm's market value increases. There is no significant difference between the sample and matching firm's size at any dividend-increase group length, indicating that the matching technique has successfully identified a firm with a similar size to the dividend-increasing firm.

Table 2.2
Comparison of Sample Firm and Matching Firm's Characteristics

The table reports sample statistics for the market value of equity (Panel A) and the market-to-book ratio (Panel B) at the time of the *i*th dividend increase for firms with a dividend track record of length *i*. The market value of equity is calculated as the product of the stock price and the number of shares outstanding for the most recent quarter ended before the i^{th} dividend increase declaration date. The market-to-book ratio is defined as the market value of equity divided by the book value of stockholders' equity for the most recent quarter prior to the dividend increase declaration date.

PANEL A: Market Value of Equity						
Dividend Track Record Length, *i*	Mean			Median		
	Sample Firm	Matching Firm	*p*-value of difference	Sample Firm	Matching Firm	*p*-value of difference
1	2,484	2,309	0.241	284	272	0.115
2	3,038	2,851	0.527	362	355	0.320
3	3,452	3,311	0.763	464	443	0.385
4	3,448	3,244	0.667	547	522	0.479
5	3,603	3,291	0.585	612	595	0.517
6	4,397	3,973	0.555	760	708	0.503
7	4,507	4,113	0.588	824	789	0.566
8	4,863	4,470	0.648	926	898	0.537
9	5,105	4,716	0.664	1,060	981	0.647
10	5,860	5,392	0.748	1,115	1,069	0.697
PANEL B: Market-to-Book Ratio						
Dividend Track Record Length, *i*	Mean			Median		
	Sample Firm	Matching Firm	*p*-value of difference	Sample Firm	Matching Firm	*p*-value of difference
1	2.10	2.04	0.044	1.62	1.62	0.895
2	2.36	2.18	0.178	1.70	1.69	0.937
3	2.23	2.19	0.548	1.74	1.73	0.967
4	2.25	2.21	0.485	1.73	1.72	0.940
5	2.23	2.22	0.955	1.75	1.75	0.975
6	2.30	2.26	0.625	1.79	1.78	0.958
7	3.51	2.31	0.313	1.84	1.84	0.930
8	2.52	2.38	0.444	1.84	1.83	0.950
9	2.50	2.43	0.607	1.92	1.92	0.968
10	2.55	2.47	0.554	1.99	2.01	0.925

The median market-to-book ratio of the sample firms and control firms at the time of the first dividend increase are 1.62 and 1.62, respectively, and again, by design the difference in these two medians is not significant (p-value = 0.90). The market-to-book ratio also increases as the dividend-increase track record lengthens, but the relationship is not perfectly monotonic, with the ratio marginally dropping from 1.74 to 1.73 when progressing from the third to the fourth dividend increase. Again, by construction the sample and matching firm's market-to-book ratio are not significantly different. The results in Table 2.2 indicate extending the track record of consecutive dividend increases is associated with increasing financial success when measured using two common variables. We examine long-term stock returns following each consecutive dividend increase within a track record in the next section.

2.5 Annual Returns Measurement

We use the buy-and-hold methodology of Barber and Lyon (1997) to calculate annual returns for the five years following the i^{th} dividend increase announcement for firms with a track record of i consecutive annual dividend increases (i = 1 to 10). Benartzi et al. (1997) calculate abnormal returns for overlapping intervals of different lengths. Their intervals all start from the announcement month but end at different points in time - from 6 up to 36 months later. In this case, the significant abnormal returns they report for the period from month zero to month 36 may be a manifestation of the significant abnormal returns that they compute in the first six months following the increase. To combat the possibility that returns are different for each interval we follow Myers et al. (2007) and calculate returns for each of the five consecutive twelve-month-long intervals following the increase. We also report annual returns for the sample firm and the control firm, rather than simply reporting the abnormal return (i.e., the difference between the two groups of firms) to understand the magnitude of

the raw returns that accrue to a dividend-increasing firm. For sample firms we use the CRSP monthly returns database to identify the monthly return (including dividends) for each of the twelve months starting in the month that contains the dividend increase announcement (i.e., month 0) and ending 11 months later. For example, the dividend increase declared by TJX Companies, Inc. on 8 April 2003 represents the seventh consecutive dividend increase. Therefore, to calculate annual returns following this increase we calculate returns for each month from April 2003 to March 2004. We then use these twelve monthly return figures to form an annual buy-and-hold return, as shown in equation (2.1). The annual buy-and-hold return for the first year following a dividend increase, $r_{s,i}$, for sample firm i is calculated as follows:

$$r_{s,i} = \prod_{k=0}^{11} \left(1 + r_{i,p+k}\right) - 1 \qquad (2.1)$$

where p is the month of the dividend increase and $r_{i,p+k}$ is the CRSP monthly return (including dividends) for stock i for month $p + k$. This return calculation is then repeated for the second year following the dividend increase, (i.e., from $k = 12$ to 23 in equation (2.1)), and similarly for years 3, 4 and 5. In the case of TJX Companies the return for year 2 is calculated using monthly returns from April 2004 to March 2005, and subsequent returns are calculated likewise. Since our sample firms increase the dividend in the same quarter each fiscal year, each twelve month returns window contains exactly one dividend increase followed by a further three quarterly dividends of the same amount. If the sample firm delists during a year then we follow the technique explained in Barber and Lyon (1997) and construct a blended return using the return on a reference portfolio.[6] Specifically, we identify

[6] Shumway (1997) notes that stock returns are biased for firms where the delisting is a surprise (e.g., due to bankruptcy or for performance-related reasons). Surprise delists are not prevalent in our sample and therefore any bias in our results is unlikely to be meaningful. For example, of the 329 delisted firms in the sample of 9,041 first-time increases just 11 are surprises (i.e., the first digit of the 3-digit CRSP delisting code is a 5). Of the remaining 318 delists, 289 are due to a merger (the first digit is a 2) and 29 are classified by CRSP as

the firm's CRSP market capitalisation decile at the time of the delisting month and then use the CRSP size-decile returns for the remainder of the year in place of the (missing) sample firm's CRSP monthly returns. For subsequent years we discard the delisted dividend-increasing firm from the sample. We compute the annual buy-and-hold return for sample firm *i*'s control firm, $r_{c,i}$, as the twelve-month compounded return using the following equation:

$$r_{c,i} = \prod_{k=0}^{12}\left(1 + r_{i,q+k}\right) - 1 \tag{2.2}$$

where q is the month of the control firm's fiscal quarter-end immediately prior to the sample firm's dividend increase announcement date and $r_{i,q+k}$ is the CRSP monthly return (including dividends) for stock i for month $q + k$. We then recalculate equation (2.1) and (2.2) for each of the five years following the first dividend increase in a track record up to the tenth increase. Different month subscripts are necessary for the return measures in equation (2.1) and (2.2) because the twelve month windows used to calculate the buy-and-hold returns for each dividend-increasing firm in equation (2.1) and its non-dividend-increasing counterpart in equation (2.2) do not coincide.[7] We assess the significance of the difference between sample and control firms' buy-and-hold returns each year using the parametric two-sample *t*-test and the non-parametric Wilcoxon *Z*-test.

2.6 Results

Table 2.3 reports sample sizes and annual returns for the five years following the first

Exchanges (the first digit is a 3). Thus, most delistings are not surprises but due to pre-announced mergers and in these cases it is reasonable to calculate a buy-and-hold return ignoring the delisting return (Shumway, 1997).

[7] Approximately three-quarters (i.e., 15,476) of the pooled sample of 20,604 dividend-increasing firms have twelve-month return windows that correspond exactly with the matching firm. The remaining, non-matching, return windows are offset by one or two months only, mostly caused by either the sample or matching firm having a fiscal quarter not ending in March, June, September or December.

Table 2.3
Abnormal Returns Classified by Consecutively-Numbered Increase

The table reports buy-and-hold returns for each of the first five one-year long intervals, and the dividend-increase announcement month, following the i^{th} dividend increase in a track record of prior dividend increases, where i = 1 to 10. For the i^{th} dividend increase the sample firm has a track record of increasing the dividend once a year, in the same quarter of each year for the past (*i-1)* years. Returns are determined using the matching-firm method. For each dividend-increasing firm this method allocates a matching firm based on the procedure described in Barber and Lyon (1997). We first identify a group of potential matching firms that satisfy the following criteria: 1. It declares the same dividend amount for the two consecutive quarters prior to the dividend-increasing firm's dividend increase declaration date, and 2. It has a market value of equity between 70% and 130% of the dividend-increasing firm's market value of equity. From this group of potential matches we then select the firm that has the closest market-to-book ratio to the sample firm's market-to-book ratio and call it the matching firm. Sample firm returns are calculated as monthly compounded buy-and-hold returns (including dividends) starting in the month that contains the dividend increase and ending in the month prior to the dividend increase in the following year. Control firm returns are calculated as monthly compounded buy-and-hold returns (including dividends) starting in the fiscal quarter immediately prior to the month that contains the sample firm's dividend increase and ending eleven months later.

	Mean Buy-and-Hold Return				Median Buy-and-Hold Return				
Returns following the first dividend increase									
Year	Sample Firm	Matching Firm	Difference	*p*-value	Sample Firm	Matching Firm	Difference	*p*-value	*n*
1	0.232	0.169	0.063	0.000	0.174	0.130	0.044	0.000	9041
2	0.183	0.163	0.019	0.001	0.141	0.129	0.016	0.004	8649
3	0.154	0.141	0.013	0.029	0.122	0.110	0.004	0.018	8161
4	0.133	0.124	0.008	0.225	0.099	0.096	0.006	0.239	7696
5	0.138	0.135	0.003	0.656	0.104	0.108	0.002	0.953	7268
Announcement Month	0.036	0.014	0.022	0.000	0.027	0.009	0.018	0.000	9037
Returns following the second dividend increase									
Year	Sample Firm	Matching Firm	Difference	*p*-value	Sample Firm	Matching Firm	Difference	*p*-value	*n*
1	0.213	0.178	0.035	0.000	0.172	0.137	0.031	0.000	3701
2	0.160	0.152	0.008	0.334	0.129	0.111	0.005	0.085	3574
3	0.161	0.149	0.012	0.208	0.121	0.105	0.006	0.078	3371
4	0.131	0.125	0.006	0.571	0.106	0.103	0.001	0.279	3181
5	0.137	0.124	0.013	0.184	0.110	0.100	0.007	0.155	2996
Announcement Month	0.030	0.014	0.015	0.000	0.023	0.010	0.012	0.000	3700
Returns following the third dividend increase									
Year	Sample Firm	Matching Firm	Difference	*p*-value	Sample Firm	Matching Firm	Difference	*p*-value	*n*
1	0.193	0.170	0.023	0.034	0.152	0.132	0.027	0.008	2188
2	0.164	0.143	0.021	0.064	0.131	0.113	0.015	0.027	2112
3	0.149	0.141	0.008	0.508	0.121	0.110	0.018	0.102	1999
4	0.125	0.124	0.001	0.942	0.109	0.099	0.002	0.470	1889
5	0.136	0.135	0.001	0.932	0.105	0.116	0.006	0.883	1799
Announcement Month	0.023	0.012	0.011	0.000	0.016	0.009	0.008	0.000	2188

Returns following the fourth dividend increase									
Year	Sample Firm	Matching Firm	Difference	*p*-value	Sample Firm	Matching Firm	Difference	*p*-value	*n*
1	0.202	0.172	0.030	0.025	0.152	0.136	0.018	0.047	1493
2	0.170	0.174	-0.003	0.807	0.140	0.120	0.012	0.196	1440
3	0.150	0.124	0.025	0.068	0.122	0.111	0.018	0.054	1374
4	0.127	0.139	-0.011	0.503	0.095	0.113	0.012	0.766	1320
5	0.135	0.150	-0.015	0.281	0.117	0.134	-0.015	0.616	1254
Announcement Month	0.025	0.013	0.012	0.000	0.020	0.008	0.012	0.000	1493
Returns following the fifth dividend increase									
Year	Sample Firm	Matching Firm	Difference	*p*-value	Sample Firm	Matching Firm	Difference	*p*-value	*n*
1	0.205	0.179	0.026	0.073	0.168	0.146	0.029	0.032	1125
2	0.163	0.154	0.009	0.544	0.132	0.116	0.009	0.165	1090
3	0.147	0.127	0.020	0.173	0.126	0.108	0.029	0.068	1048
4	0.128	0.132	-0.004	0.776	0.099	0.122	-0.029	0.816	997
5	0.142	0.134	0.008	0.583	0.120	0.116	0.019	0.451	970
Announcement Month	0.027	0.011	0.016	0.000	0.023	0.007	0.012	0.000	1125
Returns following the sixth dividend increase									
Year	Sample Firm	Matching Firm	Difference	*p*-value	Sample Firm	Matching Firm	Difference	*p*-value	*n*
1	0.170	0.155	0.015	0.340	0.137	0.129	0.019	0.356	868
2	0.159	0.158	0.001	0.947	0.136	0.134	0.011	0.637	851
3	0.141	0.151	-0.009	0.585	0.126	0.113	0.004	0.557	814
4	0.149	0.139	0.011	0.543	0.132	0.115	0.027	0.154	787
5	0.147	0.143	0.004	0.819	0.109	0.131	-0.018	0.887	746
Announcement Month	0.020	0.016	0.003	0.414	0.014	0.011	0.002	0.362	868
Returns following the seventh dividend increase									
Year	Sample Firm	Matching Firm	Difference	*p*-value	Sample Firm	Matching Firm	Difference	*p*-value	*n*
1	0.166	0.154	0.012	0.491	0.151	0.127	0.011	0.258	696
2	0.156	0.169	-0.013	0.458	0.146	0.131	0.006	0.965	680
3	0.164	0.152	0.012	0.477	0.144	0.137	0.023	0.381	662
4	0.151	0.132	0.018	0.362	0.116	0.105	0.014	0.331	630
5	0.138	0.154	-0.016	0.446	0.112	0.130	-0.012	0.632	608
Announcement Month	0.012	0.014	-0.001	0.785	0.011	0.006	0.001	0.495	696

Returns following the eighth dividend increase									
Year	Sample Firm	Matching Firm	Difference	*p*-value	Sample Firm	Matching Firm	Difference	*p*-value	*n*
1	0.167	0.140	0.027	0.135	0.156	0.117	0.017	0.057	591
2	0.170	0.145	0.026	0.190	0.144	0.123	0.036	0.050	579
3	0.156	0.153	0.003	0.876	0.125	0.128	-0.001	0.553	550
4	0.146	0.127	0.019	0.367	0.118	0.128	-0.016	0.652	531
5	0.139	0.132	0.008	0.710	0.135	0.105	-0.012	0.273	507
Announcement Month	0.026	0.018	0.008	0.094	0.019	0.010	0.007	0.065	591
Returns following the ninth dividend increase									
Year	Sample Firm	Matching Firm	Difference	*p*-value	Sample Firm	Matching Firm	Difference	*p*-value	*n*
1	0.188	0.195	-0.007	0.710	0.157	0.156	0.018	0.687	501
2	0.160	0.170	-0.010	0.634	0.126	0.127	-0.001	0.988	481
3	0.152	0.136	0.016	0.447	0.119	0.134	0.009	0.741	466
4	0.146	0.125	0.021	0.311	0.135	0.091	0.022	0.093	447
5	0.131	0.115	0.016	0.482	0.092	0.119	0.007	0.836	428
Announcement Month	0.022	0.016	0.006	0.230	0.016	0.007	0.010	0.034	501
Returns following the tenth dividend increase									
Year	Sample Firm	Matching Firm	Difference	*p*-value	Sample Firm	Matching Firm	Difference	*p*-value	*n*
1	0.167	0.183	-0.016	0.481	0.137	0.140	0.013	0.985	400
2	0.170	0.153	0.017	0.477	0.133	0.128	0.017	0.358	389
3	0.130	0.122	0.008	0.739	0.126	0.100	0.020	0.458	373
4	0.138	0.127	0.011	0.664	0.097	0.091	0.016	0.470	357
5	0.147	0.108	0.039	0.113	0.118	0.101	0.047	0.113	347
Announcement Month	0.024	0.008	0.015	0.006	0.022	0.004	0.017	0.002	400

dividend increase through to the tenth dividend increase in a track record. We identify over 9,000 first-time dividend increases and of this quantity 3,700, or 40.9%, then announce another increase four quarters' later resulting in the track record extending to two years. The proportion of firms extending the track record length by one additional year increases as the track record gets longer, suggesting that firms are more reluctant to deviate from their historical payout policy the longer the policy has been in place. For example, out of the 520 firms announcing a ninth increase, 422 (or, 81%) announce another increase in the same quarter of the following year, extending the track record length to ten.[8]

Turning now to the buy-and-hold returns that accrue to dividend-increasing firms, we present statistics for both the mean and median return. For the sample of firms announcing the first dividend increase the mean return corresponding to the first, second, third, fourth and fifth year following the increase is 23.3%, 18.3%, 15.4%, 13.3% and 13.8%, respectively. Subtracting the control firm's corresponding return yields annual abnormal returns of 6.3%, 2%, 1.3%, 0.9% and 0.3%. These abnormal returns are significantly positive for each of the first three years after the increase, with the level of significance declining during this three-year post-increase interval. There is no statistical difference in returns in the fourth and fifth years following the first dividend increase. For the group of firms that announce a second consecutive dividend increase abnormal returns are significantly positive for only the first twelve months following the increase. For subsequent consecutively-numbered dividend-increases significant abnormal returns are then mostly confined to the twelve months immediately following the third, fourth and fifth dividend increase in a track record. Firms

[8] We identify 520 instances of a ninth consecutive increase in our sample but Table 2.3 reports returns following a smaller sample size of 501 increases because for 18 firms we are unable to obtain the required financial data around the time of the ninth increase to calculate the market value and the market-to-book ratio, and we are unable to identify a match for one dividend-increasing firm. Of the 520 firms announcing a ninth consecutive 98 do not announce a tenth consecutive increase for the following reasons: 21 firms delist in the year following the ninth increase; 33 firms break the same-quarter dividend-increase habit by announcing a dividend change in the three quarters following the ninth increase; and 44 firms fail to increase the dividend in the same quarter of the following year. These figures suggest that 520 – 98 = 422 firms announce a tenth consecutive increase but note that 22 firms do so in 2007, which is after the end of our sample period, and thus Table 2.4 reports that $n = 400$.

Table 2.4
Comparison of Abnormal Returns using Overlapping and Non-Overlapping Intervals

The table reports buy-and-hold abnormal returns for various interval lengths following a dividend increase announcement. The sample consists of dividend increases that are preceded by between zero and nine prior dividend increases in the same quarter of the previous year. Panel A forms five overlapping post-increase intervals that all start from the month containing the dividend increase but end at different periods from twelve up to sixty months later, in twelve-month increments. Panel B partitions the five-year post-increase period into five non-overlapping twelve-month-long intervals.

	Mean Buy-and-Hold Return				Median Buy-and-Hold Return				
PANEL A: Accumulating yearly interval lengths									
Interval relative to dividend increase month 0	Sample Firm	Matching Firm	Difference	*p*-value	Sample Firm	Matching Firm	Difference	*p*-value	*n*
0 to 12	0.212	0.171	0.041	0.000	0.165	0.133	0.032	0.000	20604
0 to 24	0.403	0.350	0.053	0.000	0.311	0.271	0.043	0.000	19845
0 to 36	0.605	0.541	0.064	0.000	0.447	0.401	0.043	0.000	18818
0 to 48	0.793	0.725	0.067	0.000	0.573	0.521	0.035	0.000	17835
0 to 60	1.027	0.941	0.086	0.000	0.704	0.654	0.035	0.000	16923
PANEL B: Constant one-year interval lengths									
Interval relative to dividend increase month 0	Sample Firm	Matching Firm	Difference	*p*-value	Sample Firm	Matching Firm	Difference	*p*-value	*n*
0 to 12	0.212	0.171	0.041	0.000	0.165	0.133	0.032	0.000	20604
13 to 24	0.172	0.159	0.013	0.000	0.136	0.123	0.013	0.000	19845
25 to 36	0.154	0.141	0.013	0.001	0.123	0.111	0.009	0.000	18818
37 to 48	0.133	0.127	0.006	0.153	0.106	0.102	0.005	0.014	17835
49 to 60	0.138	0.134	0.004	0.320	0.109	0.111	0.002	0.277	16923
Announcement Month	0.030	0.014	0.016	0.000	0.022	0.009	0.013	0.000	20599

announcing their sixth, and subsequent, consecutive increase earn returns that are no different from control firms. These results indicate that dividend-increasing firms do earn positive abnormal returns but they eventually become statistically indistinguishable from zero as the dividend-increase record becomes longer.

Our identification of a reduction in the magnitude of post-increase abnormal returns the more often a dividend increase has already occurred is not evident in Benartzi et al. (1997) because they pool all dividend increases without considering the dividend track record prior to the increase. To demonstrate that in recent times the track record is still an important factor in explaining the magnitude of long-term abnormal returns following dividend increases, in Table 2.4 we also pool our sample of dividend increases without regard for the prior track record resulting in a sample size of over 20,000. We also examine the performance of dividend-increasing firms by forming several overlapping post-increase intervals in the same way as Benartzi et al. We measure returns for the sample and matching firm starting from the dividend increase month and finishing one, two, three, four and five years later, yielding five post-increase intervals.[9] The figures in Panel A indicate that for the year following a dividend increase sample firms earn an average return of 21.2%, compared to 17.1% for matching firms, giving an abnormal return of 4.1%. Similarly, abnormal returns are 5.3% for two years, 6.4% for three years, 6.7% for four years and 8.6% for the five-year post-increase interval, and all figures are all highly significant (*p*-value of the difference in returns between the sample firm and the matching firm for each post-increase interval length is less than 0.001). These returns are similar in magnitude to the significant abnormal returns of 2.1%, 4.6% and 8% corresponding to the one, two, and three-year post-increase interval in

[9] We subtract the control firm's return to then calculate abnormal returns whereas Benartzi et al. (1997) instead subtract the return on a benchmark portfolio. Another important difference is that their sample consists of all dividend increases, regardless of the prior track record, whereas our sample contains only increases preceded by a track record of once-a-year increases (except for the first increase).

Benartzi et al. and illustrate that dividend-increasing firms outperform their non-dividend-increasing counterparts. However, one limitation of using overlapping post-increase intervals is that it is not evident if the abnormal returns are significant for *each* year following an increase, or if returns for longer intervals are significant simply because returns are significant for a shorter interval. For example, the abnormal return for the four-year period following the increase is 6.7%, increasing by 1.9% to 8.6% for the five years after the increase. The time period intervals used in Panel A do not indicate if the resulting 1.9% abnormal return for the fifth year is significant or not. To overcome this limitation in Panel B we construct five non-overlapping one-year long intervals allowing us to identify the duration of the significance of the post-increase abnormal returns. In the first year after the increase abnormal returns are 4.1%, which is the same figure as that reported using Panel A's figures because the intervals are identical. Abnormal returns then decrease monotonically for each subsequent year dropping to 1.3% in the second year following the increase, 1.3% for the third year, 0.6% for the fourth year and 0.4% for the fifth year. The *p*-values indicate that abnormal returns following dividend increases are confined to each of the first three years only and are insignificant in the fourth and fifth year after the increase. These results reveal that the size of the abnormal returns diminish as time passes, but do not remain significant as might be interpreted from the figures in Panel A.

Although the analysis in Panel B indicates that significant abnormal returns are restricted to the three-year post-increase interval only, pooling all dividend increases conceals the relevance of the prior track record. As we show in Table 2.3, forming dividend-increase groups based on the number of prior dividend increases reveals that returns are mostly concentrated in the twelve months after an increase for just the first through to the fifth dividend increase. The insignificant abnormal returns that follow the sixth, and subsequent, increases are consistent with the market learning to anticipate that the firm will increase the

dividend in the same quarter of the following year, leading to abnormal returns that are no different from zero. Identifying the size and duration of the abnormal returns that accrue to dividend-increasing firms is a new contribution to the literature and reinforces evidence of market learning. The learning that we identify is consistent with that documented for other corporate events such as announcements of splits and seasoned equity offerings, and indicates that the more often the event is repeated, the less significant the market reaction.

In this essay we study abnormal returns following each sequentially-numbered dividend increase within a track record of dividend increases. Although Myers et al. (2007) study track records of earnings increases, like us they also measure abnormal returns following each sequentially-numbered earnings increase. However, their sample is biased because it is constructed ex-post, in contrast to our sample that is constructed ex-ante. They first identify a sample of 746 firms with a track record of at least twenty consecutive quarters (i.e., five years) of non-decreasing earnings per share (EPS) and then study abnormal returns for each of the first five years of the track record. Their sample firms exhibit positive abnormal returns exceeding 25% in each of the first three years of the five-year EPS track record, however the level of significance of these figures are not supplied. These large positive returns are not unexpected because their sample firms survive for at least five years and consequently would be expected to be financially successful, as evidenced by the reported increase in asset value and market-to-book ratio throughout the five-year period. Nevertheless, it is instructive to compare the magnitude of returns that accrue to firms with a five-year earnings-track record with the returns for firms with a comparable five-year dividend track record. We use the 1,125 firms identified in Table 2.3 with a five-year track record of dividend increases. Note that this number represents a survival rate of approximately 12% of the 9,041 firms that announce a first dividend increase. Requiring COMPUSTAT data to compute the sample firm's market value and market-to-book ratio

Table 2.5
Annual Abnormal Returns for Firms Known to Survive to a Fifth Consecutive Dividend Increase

The table reports the buy-and-hold returns for the twelve months following each dividend increase for the 819 sample firms with a five-year dividend track record, and possess complete COMPUSTAT data. A matching firm is identified based on the market value, market-to-book ratio, and prior dividend payment pattern at the time of the first dividend increase announced by the sample firm.

	Mean Buy-and-Hold Return				Median Buy-and-Hold Return			
Year of track record	Sample Firm	Matching Firm	Difference	*p*-value	Sample Firm	Matching Firm	Difference	*p*-value
1	0.244	0.196	0.048	0.005	0.201	0.159	0.044	0.001
2	0.220	0.170	0.050	0.002	0.193	0.149	0.062	0.000
3	0.213	0.163	0.050	0.003	0.188	0.130	0.059	0.000
4	0.177	0.139	0.039	0.017	0.139	0.123	0.040	0.004
5	0.181	0.155	0.026	0.091	0.146	0.139	0.027	0.048
Announcement Month	0.034	0.017	0.018	0.000	0.029	0.012	0.013	0.000

around the time of each of the five successive dividend increases that form the five-year track record reduces the sample size to 819. Table 2.5 indicates that abnormal returns are significantly positive and decline monotonically in the twelve months following each consecutively-numbered dividend increase in the track record. The magnitude of the abnormal returns are 5.1%, 5.0%, 4.7% and 3.4% and 3% following the first, second, third, fourth and fifth increase, respectively. These figures are substantially smaller than the corresponding figures for earnings track records of 22.2%, 17.8%, 19.0%, 18.2% and 12% reported in Table 3 of Myers et al. Notwithstanding the fact that the two analyses suffer from look-ahead bias, the figures suggest that dividend-increase consistency is also rewarded, but the rewards are not as large as those demonstrated for earnings-increase consistency.

2.7 Earnings Track Records and Dividend Track Records

As a check on the reliability of our results we explore the possibility that our sample firms also have long earnings track records. If firms do follow the Lintner (1956) model with dividends, in part, being a function of current earnings then firms with a track record of consistent earnings increases may also display a track record of steady dividend increases. In this case, the regularly dividend-increasing firms that we identify may be a subset of the firms with consistent earnings increases. If the two groups contain the same firms then the abnormal returns following earnings increases for firms with unbroken prior track records of earnings increases in Myers et al. (2007) and Barth et al. (1999) are the same abnormal returns following dividend increases that we observe. To identify the length of the uninterrupted record of annual earnings increases for our sample of dividend-increasing firms we gather adjusted annual earnings-per-share figures (excluding extraordinary items) from the COMPUSTAT database starting with the year-end before the year containing the first

Table 2.6
Comparison of Earnings Track Record Length and Dividend Track Record Length

The table reports the maximum length of the earnings increase track record for each group. For example, for firms announcing a sixth consecutive dividend increase, no firms have a longest earnings track record of zero (that is, all firms have one or more earnings increase during the six-year period), 106 have a longest earnings-increase track record of four years and 236 increase annual earnings per share each year corresponding to the six-year dividend track record.

	Dividend Track Record Length									
Length of longest Earnings Track Record	1	2	3	4	5	6	7	8	9	10
0	2259	110	8	1	0	0	0	0	0	0
1	6278	1101	433	156	78	31	16	8	4	2
2		2125	516	300	202	125	72	50	33	21
3			1006	299	198	170	128	78	65	46
4				567	173	106	97	98	68	53
5					344	98	63	60	65	47
6						236	64	45	40	36
7							163	51	38	31
8								115	32	24
9									81	18
10										61
Incomplete EPS data	504	365	225	170	130	102	93	86	75	61
Total	9041	3701	2188	1493	1125	868	696	591	501	400
% of firms with matching dividend and earnings track record length	69.4%	57.4%	46.0%	38.0%	30.6%	27.2%	23.4%	19.5%	16.2%	15.3%

dividend increase announcement and finishing with the year-end before the i^{th} consecutive dividend increase announcement (where i = 1 to 10). We compute the number of consecutive years of non-decreasing, adjusted, annual earnings per share (EPS) when measured relative to the previous fiscal year's adjusted annual EPS.

Consistent with Myers et al. (2007) we measure the longest earnings track record for each sample firm and the distribution of the maximum track record length is reported in Table 2.6. Of the 9,041 sample firms that announce their first dividend increase 69% (i.e., 6278 ÷ 9041) also announce an increase in annual earnings.[10] As the dividend track record length increases the proportion of firms that maintain a corresponding track record of earnings increases of the same length declines monotonically, with just 15% (61 ÷ 400) of firms with a ten-year dividend-increase track record also maintaining a ten-year EPS-increase track record. The frequency distribution across each dividend-increase track record length reveals an interesting point. The EPS track record length category of zero contains the least number of observations and the number steadily increases to a local peak that is around half the dividend track record length. For a dividend track record of two or three the most common maximum earnings track record length is one, for a dividend track record of four or five most firms have an earnings track record length of two, for a dividend track record of six or seven the greatest number of firms have a maximum earnings track record length of three, and for firms with a dividend-increase track record length of eight or more the most common earnings track record length is four. After this local peak mid-way, the frequency then steadily decreases until the next-to-last maximum earnings track record length. Then, in contrast to the expectation that the frequency would continue to decrease when proceeding from the next-to-last to the last earnings track record length, the maximum number of

[10] Due to missing earnings per share (EPS) figures we cannot form a complete EPS history to then determine the EPS track record length and report the number of cases in the third last row of Table 2.6 titled 'Incomplete EPS data'.

observations actually occurs when the earnings-increase track record length has the same length as the dividend-increase track record. Long records of uninterrupted earnings increases are extremely unlikely to be observed by chance, as shown by Myers et al. They argue that the presence of a large number of firms with such a record and the rewards that are associated with these firms suggests that earnings are being carefully managed year-to-year in order to maintain and extend the length of the record. We do not investigate if the firms with long track records of earnings increases in our sample engage in earnings management. Instead, we identify these firms to explore if the abnormal returns for these firms are different to the abnormal returns for firms with shorter track records. We calculate abnormal returns in the twelve months following the dividend increase for two groups of firms based on their earnings track record length and present the results in Table 2.7.[11] The first group, 'EPS Track Record = *i*' contains firms that have an earnings track record length equal to the dividend track record length *i*, and the second group, 'EPS Track Record < *i*' consists of firms with a maximum EPS track record length that is less than the dividend track record length *i*, where *i* = 1 to 10. These two groups represent a partitioning of the abnormal return in the twelve months following each dividend increase. Table 2.3 reveals that the mean abnormal return in the twelve months following the first dividend increase (*i* = 1) is 5.8%. Table 2.7 shows that this abnormal return figure can be decomposed into an average abnormal return of 6.8% for firms with an EPS track record of one (i.e., firms with the same or higher EPS compared to the prior year) and an average abnormal return of 5.2% for firms with an EPS track record less than one (i.e., firms with lower EPS compared to the previous year). Both returns are highly significant (*p*-value < 0.001) however the difference between the two average return figures is significant at the 5% level only.

[11] We study abnormal returns in the first year only because Table 2.3 indicates that returns are highly significant in the first year and the significance level declines in subsequent years.

Table 2.7
Comparison of Abnormal Returns based on Earnings Track Record Length

The table compares the mean and median buy-and-hold abnormal return (BHAR) for the twelve months following a dividend increase for two groups of firms with different earnings track record lengths. Abnormal return is calculated as the sample firm's return minus the matching firm's return. The *p*-value for the differences in mean BHAR for each dividend track record length is based on a two-sample *t*-test of the difference between the mean return of firms with an earnings track record of the same length as the dividend track record and the mean return for firms with an earnings track record that is shorter than the dividend track record length. Similarly, the *p*-value of the difference in the corresponding median BHAR is based on the Wilcoxon test of a difference in the median abnormal return of the two earnings track record length samples.

	Non-Decreasing Annual EPS Track Record Length								Difference	Difference
Dividend track	EPS track record length = *i*				EPS track record length < *i*				in Means	in Medians
record length, *i*	Mean BHAR	*p*-value	Median BHAR	*p*-value	Mean BHAR	*p*-value	Median BHAR	*p*-value	*p*-value	*p*-value
1	0.068	0.000	0.041	0.000	0.052	0.000	0.040	0.000	0.035	0.162
2	0.037	0.001	0.031	0.001	0.032	0.014	0.031	0.001	0.740	0.905
3	0.024	0.167	0.037	0.125	0.022	0.104	0.023	0.125	0.943	0.486
4	0.028	0.206	0.015	0.127	0.031	0.063	0.023	0.127	0.890	0.647
5	0.033	0.208	0.041	0.100	0.024	0.186	0.026	0.100	0.732	0.838
6	0.029	0.353	0.024	0.519	0.009	0.594	0.016	0.519	0.517	0.592
7	-0.018	0.592	0.014	0.210	0.021	0.287	0.011	0.210	0.251	0.359
8	0.042	0.348	0.006	0.132	0.023	0.235	0.018	0.132	0.605	0.559
9	0.002	0.959	0.030	0.543	-0.009	0.670	0.015	0.543	0.806	0.860
10	0.001	0.986	-0.010	0.952	-0.019	0.444	0.017	0.952	0.716	0.720

Firms announcing a second consecutive dividend increase ($i = 2$) also exhibit significantly positive twelve-month abnormal returns for both groups of earnings track record length firms. The average abnormal return for firms with a corresponding track record of two consecutive annual earnings increases of 3.7% is not significantly different from the average abnormal return of 3.2% for firms without an uninterrupted two-year earnings track record. Thus, although over half of firms announcing a second-time dividend increase also increase earnings for a second time, the abnormal returns for these two-time EPS-increasing firms are no different to firms without a two-time record of earnings increases. For all remaining dividend track record lengths ($i = 3$ to 10) there is no significant difference between the abnormal return of firms with an uninterrupted record of earnings increases compared to the abnormal return of firms without such a record. This analysis confirms the positive abnormal returns following the second through to the fifth consecutive dividend increase that we identify are not explained by the significant abnormal returns following earnings increases that have been reported by other researchers. The evidence presented in Table 2.7 confirms that dividend-increase consistency is rewarded by the stock market and this reward is distinct from the return for corresponding earnings-increase consistency.

2.8 Conclusion

It is known that when setting the dividend the bulk of managers endeavour to maintain a dividend policy that is consistent with its historic policy. We document a large number of firms with a long track record of announcing regularly timed dividend increases, consistent with managers' stated objective.

Existing research does not consider the role of dividend consistency and consequently cannot answer whether returns are different depending on the frequency of past dividend behaviour. We provide new evidence that firms with a policy of consistent dividend increases also attract longer-term returns, or rewards, and that the reward dissipates over time and eventually vanishes.

Our results confirm that dividend consistency is rewarded, but the reward decreases as the track record of dividend-increase consistency becomes longer. Following the first dividend increase our sample firms exhibit significantly positive abnormal returns for the next three years. From the first-time dividend-increasing firms we identify those that next increase the dividend in the same quarter of the following year to form a sample of firms with a two-year track record of dividend increases. These sample firms display significant positive post-increase abnormal returns, but smaller in magnitude and significance compared to first-time dividend increases. Then, as the dividend-increase track record gets longer the size and statistical significance of the abnormal returns declines. Following the sixth dividend increase abnormal returns in the next twelve months are no different from zero.

We argue that these abnormal returns represent a market reward for embarking on a dividend policy that has predictable regularity. Firms first attract and then retain a reward because each increase in the track record further enhances the firm's credibility regarding its commitment to maintain the dividend-increase pattern. By the sixth increase the firm has

established credibility for future dividend increases and no longer attracts a reward. Indeed, the proportion of firms that fail to continue the record decreases as the record becomes longer. For example, approximately four-fifths of the sample of firms with a track record of nine consecutive years of annual dividend increases declares a subsequent, and tenth, dividend increase in the same quarter of the following year. The high proportion of firms that extend the track record suggests that managers are unlikely to deviate from a well-established dividend-increase pattern.

Our results help to answer the questions why dividend consistency is so important. Embarking on such a carefully-crafted dividend policy is rewarded with a market premium. The abnormal returns that we detect are not the same abnormal returns that have been reported for earnings increases since a very small number of firms in our sample of dividend-increasing firms maintain a corresponding pattern of consistent earnings increases. Our returns are restricted to dividend increases only and, consistent with the situation with earnings, show that dividend consistency also attracts market rewards. Our results contribute to a greater understanding of why firms announce with pride their track record of dividend consistency. Interestingly, firms do not appear to be as enthusiastic when they declare year-after-year of earnings increases.

Chapter 3

Are Certain Dividend Increases Predictable? The Effect of Repeated Dividend Increases on Market Returns

3.1 Introduction

This essay investigates patterns of consecutive annual dividend increases to determine if abnormal returns are different depending on the frequency of past dividend increases within the pattern. This analysis contributes to an understanding of how quickly markets learn to anticipate an event based on the number of times the event has already occurred. Existing studies of the stock price behaviour of dividend-increasing firms document significant positive abnormal returns for a narrow two or three-day window around the time the dividend increase is announced (e.g., Pettit, 1972; Aharony and Swary, 1980). Other studies find a significant relation between abnormal returns and various characteristics of dividend-increasing firms, such as dividend yield, firm size (Amihud and Li, 2006), the size of the dividend change (Yoon and Starks, 1995), market-to-book value (Lang and Litzenberger, 1989), investor's dividend preferences (Li and Lie, 2006), return on assets and systematic risk (Grullon et al., 2002), and the level of institutional ownership (Amihud and Li, 2006). However, past studies have not recognised that the dividend policy that precedes an increase may also be an important factor, which is an avenue that we explore in this essay. By studying the market reaction to a dividend increase for firms with a pattern of consistent dividend increases we can determine if the market eventually learns to anticipate a dividend increase.

Surveys of financial executives by Lintner (1956) and Brav et al. (2005) reveal that when setting the dividend, the most important factor considered by decision-makers is the dividend level paid in recent quarters. Executives also report a strong aversion to cutting the dividend. Lintner integrates these two key findings into a model that explains the 'stickiness' of dividends for his small sample of firms. Using a larger sample of firms, Fama and Babiak (1968) provide evidence that dividend policies are consistent with Lintner's model. Consistent with this dividend-setting behaviour firms would be expected, over time, to develop a track record of consistent dividend changes. The empirical evidence in this study shows that, in practice, many firms' dividend policies are indeed characterised by a long track record of repeated annual dividend increases.

In light of the existing evidence that dividend increases are associated with positive abnormal returns, and given the knowledge that firms follow a consistent pattern of declaring annual dividend increases, a natural question arises: Do abnormal returns around dividend increase announcements differ depending on the firm's dividend history? We answer this question by examining chains of regularly repeated dividend increases. We define a chain as a track record of one or more consecutive years of once-a-year dividend increases where each increase occurs in the same fiscal quarter. Investigation of firms' dividend histories reveals a large number of firms with very long chains. The presence of these track records reinforces the belief that once firms embark on a dividend policy its managers feel almost obligated to continue the pattern (Skinner, 2008). For example, we identify over four hundred firms that announce their twentieth, or higher, consecutive annual dividend increase between the years 1999 to 2009. It is reasonable to assume that for this group of firms, by the twentieth increase the market would learn to anticipate future dividend increases due to the extent the dividend-increase pattern has already been repeated. However, the point in the chain that the market begins to display evidence of learning is an empirical question. Our analysis reveals that the

market learns to anticipate subsequent dividend increases after just two prior dividend increases.

DeAngelo and DeAngelo (2007) contend that a "strong" track record of dividend payments signals managers' intent to deliver future strong dividends. Although they do not define "strong" we propose that a pattern of regular quarterly dividends with regular dividend increases represents one particular type of dividend policy that may be considered "strong." In this scenario, one hypothesis is that once a firm has developed a track record of dividend increases the market may extrapolate this trend into the future. Under this hypothesis, the market's anticipation of future dividend increases may result in lower observed abnormal returns when those dividend increases are announced since the expected increase will be impounded in the price prior to the announcement. If this hypothesis is true then one would expect that the number of prior increases might be a reliable indicator of the likelihood of future increases. Indeed, we document that the dividend payment pattern is strongly persistent, particularly for firms with a long track record. While nearly half of the firms follow their first dividend increase with a second increase in the same quarter of the following year, eighty percent of those that announce an eighth increase deliver a ninth increase. This dividend-increase persistence may lead to the market having a different expectation of an increase depending on the number of preceding increases and supports a market-learning hypothesis.

We examine abnormal returns around the dividend increase announcement after grouping each increase by its order of occurrence in the chain. We find that the first and second increases exhibit significant positive abnormal returns, while abnormal returns surrounding the third and subsequent increases are not significant. We also discover that the size of the dividend change tends to decrease as the dividend-increase chain lengthens. This observation suggests that the positive relationship between returns and the size of the

dividend reported in existing studies may be explained by the fact that larger-sized dividend changes tend to occur earlier in the chain. Even after controlling for the dividend-increase number and a number of firm-specific variables, the first two dividend increases within a dividend-increase-chain remain strongly significant and subsequent increases are not significant. This result suggests by the time a firm increases its dividend for two consecutive years the market has learned to anticipate future increases. While little analysis of the role of firm dividend histories and the announcement effect on market returns currently exists, the market response to other repeated corporate events such as consecutive earnings increases have been studied. However, these studies do not examine abnormal stock returns around consecutive earnings increase announcements but instead investigate other aspects of the announcing firms' corporate performance.

As a final point of motivation, Mergent and Standard & Poor's have created a special category for firms that have a track record of consistent annual dividend increases.[12] In addition, numerous mutual funds have been created that invest solely in firms that have consistently increased their dividends.[13] The investor interest in these funds further motivates a study of this important subset of firms.

The remainder of the essay is organised as follows: Section 3.2 discusses related research. Section 3.3 explains how we identify our sample of once-a-year dividend increases and measure the chain length. The results presented in Section 3.4 reveal that for each increase within a chain only the first two dividend increases exhibit significantly positive abnormal returns, even after controlling for other variables, and Section 3.5 contains our conclusions.

[12] Mergent maintains the Dividend Achievers Index, and a number of funds exist with an investment objective to replicate the performance of the index. Mergent designates any firm that has increased its dividend for at least ten or more consecutive years as a Dividend Achiever. Standard and Poor's require a longer, twenty-five year history of consecutive annual dividend increases for a firm to be classified as a 'Dividend Aristocrat'.
[13] The Russell High Dividend Australian Shares ETF (Exchange Traded Fund) is a fund that considers a stock's 'consistency of dividends' as one of many factors to qualify for inclusion in the fund.

3.2 Repeating Corporate Events

3.2.1 Dividend Payment Patterns

An increasing number of studies investigate repeating corporate events. These studies generally conclude that the market does not consider an event in isolation, but as part of a sequence and that the market treats the event's ordinal location within the sequence as important. In the case of dividends, we argue that once a firm develops a track record of a particular number of consecutive dividend increases, future dividend increases are anticipated and therefore returns are not significant. Given that dividend increases tend to recur (Bessembinder and Zhang, 2014) there is very little analysis of dividend payment patterns, in contrast to studies that investigate patterns of other often-repeated corporate finance events. One study of dividend change announcements that considers the prior dividend history is Baker and Wurgler (2012) who argue that investors view dividends as reference points. Each dividend announcement within a sequence, or streak, of equal-sized quarterly dividends acts as a reminder of the dividend amount and so any change in the dividend is a prominent event and may be associated with larger returns. Consistent with this argument that repetition reinforces a reference point, the difference between returns for small dividend increases compared to small dividend decreases becomes larger as the streak gets longer.

3.2.2 Earnings Repetition Patterns

Our study is motivated by the notion that repeating an event leads to an expectation that the event will continue. We explore this idea in the case of dividends and investigate if the number of prior dividend increases leads to future dividend increases becoming predictable. Other often-repeated corporate events generally conclude that various firm valuation

measures are different depending on the number of prior occurrences of the event. For example, Barth et al. (1999) find that firms with a chain of at least five years of consecutive increases in annual earnings have higher price-earnings multiples than other firms. In contrast to Barth et al. (1999) who use annual data, Myers et al. (2007) examine firms with a sequence of at least five years of consecutive quarterly earnings increases and document that these firms earn positive abnormal returns for each year of the five year sequence of quarterly earnings increases. At the announcement of the first decrease in quarterly earnings, the sequence breaks resulting in significantly negative abnormal returns, which are more negative the longer the prior history of consecutive earnings increases. This reaction may have the unintended consequence of encouraging firms that may anticipate an earnings decrease to instead manage earnings in such a way to achieve an earnings increase and thereby ensure the record of earnings-increases continues unbroken.

Instead of patterns in earnings, a number of studies investigate patterns in the number of times firms equal or exceed analysts' earnings forecasts, known as "meet-or-beat earnings", or MBE, and how the frequency is related to returns. Bartov et al. (2002) find that firms with a MBE record in at least nine of the past twelve quarters display significantly higher abnormal returns around earnings announcements compared to firms without such a record. Another study by Kasznik and McNichols (2002) reveals that around each of the first three MBE events the firm displays positive abnormal returns in the year leading up to the MBE announcement, but the incremental return is smaller as the number of consecutive prior MBE increases. While the previous evidence suggests that the stock market attributes a premium to firms with a particular record of MBE, understanding how measures of return relate to both the pattern *and* the magnitude of MBE events remains largely unexplored territory. Instead of analysing returns, Mikhail et al. (2004) investigate firms with a history of MBE by more than one percent of the stock price (a "large" MBE event) and determine that

these firms have a higher cost of equity capital compared to firms without a record of large MBE events, suggesting that managers have an incentive to avoid earnings surprises.

3.2.3 Other Repeating Corporate Events

Apart from earnings and dividends other corporate finance events also report that returns are different depending on the event's prior frequency. For example, returns around seasoned equity offering (SEO) announcements are less negative around each successive SEO announcement (D'Mello et al. 2003). Similarly, for U.K. rights offerings Iqbal (2008) reports significantly negative abnormal returns around the first and second rights offering announcement while subsequent announcements exhibit returns not significantly different from zero.

In the case of stocks splits, Huang et al. (2008) examine firms' splitting history and find no significant difference in returns around split announcements for firms that have split three or more times in the prior five years compared to those with two or fewer splits. However, grouping together split announcements with one, two or three prior splits conceals the difference that exists between each subgroup. For example, Pilotte and Manuel (1996) find that abnormal returns around split announcements tend to become smaller and less significant the more often the firm has split in the past.

Finally, as shown by Elliott and Hanna (1996), firms with a habit of announcing large accounting write-offs exhibit smaller abnormal returns around subsequent write-off announcements compared to firms that have not declared any recent large write-offs. Once again, this result supports the notion that when an event is repeated often enough, the market learns to expect it.

3.3 Sample Selection and Descriptive Statistics

3.3.1 Identifying Repeated Dividend Increases

Dividend information is obtained from the Center for Research in Security Prices (CRSP) database. All taxable regular quarterly dividends (i.e. dividends with a CRSP Distribution Code of 1232) with a declaration date during 1962-2009 are identified. Although this study examines abnormal returns around dividend increase announcements that occur during 1999-2009 only, we investigate firms' entire prior dividend history starting in 1962 to correctly determine the length of the dividend-increase chain at a particular point in time, called the Chain Length.[14] For each firm, year *t* is defined as the year of the first dividend increase.[15] If the following three conditions hold:

(i) Year *t+1* contains a single dividend increase,

(ii) The dividend increase in year *t+1* is declared in the same quarter as the declaration date (DCLRDT) of the dividend increase in year *t*, and

(iii) The amount of each of the four quarterly dividends between the dividend increase in year *t* and the dividend preceding the dividend increase in year *t+1* are all equal,

then the chain length corresponding to the increase announced in year *t+1* is set to '1'. Then, if the three conditions also hold true for year *t+2*, the chain length is incremented by one to '2', and so on.[16] The identification and counting of dividend increases continues until one of

[14] For example, Hormel Foods Corporation increases its dividend in the fourth quarter of 1970 and continues to increase the dividend in the fourth quarter of every year until the end of the sample is reached in 2009, resulting in a track record of 40 years of consecutive annual dividend increases.

[15] The first dividend paid by a firm is an initiation and since dividends do not exist prior to an initiation, these events do not qualify as a dividend increase. Furthermore, statistics such as the percentage change in the dividend (as used to describe the sample in Section 3.3.3) from a quarterly amount of $0.00 to a positive amount is undefined.

[16] We consider obvious delays, or accelerations, in a firm's dividend-increase timing. For example, if a firm with a pattern of increasing the dividend in the same quarter then announces a dividend in the following year in an earlier, or later, quarter and then reverts back to increasing its dividend in the same quarter, then we maintain the dividend counting process to allow for such events.

the three conditions fails to hold, or the end of the sample period is reached. Using this counting process, the same firm can have several dividend-increase chains of varying lengths, and we retain them all.[17] In the case of chains of consecutive earnings increases, a study by Myers et al. (2007) retains only the longest chain for each firm and another study by Barth et al. (1999) does not make reference to multiple chains implying that their sample might contain more than one chain for each firm.

3.3.2 Sample Statistics

Table 3.1 contains the distribution of the number of dividend increases partitioned by chain length and announcement year for the initial sample of 6,840 increases.[18] Each of the years from 1999 to 2008 contains more than 500 increases, with the year 2009 containing 323 increases. The substantially smaller number of increases in 2009 compared to prior years is consistent with a substantial reduction in the number of dividend-increasing firms across all listed firms coinciding with the onset of the financial crisis.[19] Approximately one-third (2214 ÷ 6840) of the sample of dividend increases represents the first dividend increase, with the fraction of observations in each chain length category a monotonically decreasing until the twentieth increase. We identify over 400 firms with a track record of twenty or more years of

[17] For example, The J.M. Smucker Company commences paying dividends in 1965 and has a total of nine separate dividend-increase chains. Of these nine chains, two are contained within the sample period 1999 to 2009. One chain of increases starts in 1998 and ends in 2000 resulting in a chain length of three. Here, the dividend increase in the year 1998 is assigned a '1', 1999 is assigned a '2' and 2000 is assigned a '3'. The year 2001 does not contain a dividend increase and thus the chain terminates in 2000 with a length equal to three. A second chain commences in 2002 and continues to 2009, the end of the sample. Here, the dividend increase in 2002 is assigned a '1' and the number assigned to the dividend increase in each subsequent year is increased by one until 2009, which is assigned an '8'.

[18] For ease of exposition dividend increases that represent twenty or more consecutive annual dividend increases are combined in a single dividend-increase-number category labelled '20+'.

[19] The S&P Dow Jones Indices' Dividend Action Report (S&P Dow Jones Indices, 2014) discloses that the year 2009 contains the fewest number of dividend increases since their records commence in 2004. Their figures indicate that, for those firms reporting dividend information, the number of dividend increases in 2009 is 699, a substantial decrease from the prior year's figure of 1,310, which in turn is lower than the 1,857 dividend increases in the year 2007.

Table 3.1
Distribution of Chain Length by Year of Announcement

This table reports the distribution of dividend increases classified by announcement year and Chain Length, which is the number of years of consecutive once-a-year increases, for a sample of dividend increases occurring between 1999 and 2009. Inclusion in the sample requires that year *t+1* contains one dividend increase only and the intervening dividends between the increase in year *t* and before the increase in year *t+1* and all equal.

	Announcement Year												Survival Rate
Chain Length	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	TOTAL	
1	184	178	169	219	233	292	278	243	208	130	80	2214	-
2	116	80	74	80	100	116	160	145	124	74	34	1103	46.3%
3	69	61	48	43	45	56	79	119	106	53	27	706	59.6%
4	59	45	38	33	30	31	40	53	83	61	23	496	64.4%
5	34	41	33	31	20	24	23	29	40	49	39	363	69.6%
6	34	29	31	22	27	16	17	15	25	30	22	268	72.2%
7	30	27	22	27	19	23	10	11	15	18	18	220	77.2%
8	21	23	22	15	17	15	22	9	9	11	10	174	75.7%
9	11	17	15	20	12	19	13	20	8	5	3	143	80.5%
10	6	9	14	14	18	10	15	12	18	6	2	124	84.3%
11	4	4	5	13	13	15	8	13	9	15	2	101	79.5%
12	18	4	5	4	9	8	12	6	13	6	8	93	75.8%
13	17	14	5	4	4	8	7	11	4	10	4	88	83.5%
14	12	14	9	2	2	3	7	7	9	3	9	77	77.4%
15	7	11	8	11	2	2	3	7	7	6	2	66	86.8%
16	8	5	10	6	9	2	2	1	8	5	4	60	81.3%
17	4	8	5	8	6	8	2	2	2	3	2	50	82.1%
18	4	4	8	5	8	4	5	2	2	1	2	45	85.4%
19	4	5	3	5	5	9	5	4	2	2	0	44	93.0%
20+	31	31	37	33	35	38	41	44	46	37	32	405	-
TOTAL	673	610	561	595	614	699	749	753	738	525	323	6840	
Survival Rate	-	62.9%	61.8%	65.8%	62.1%	64.3%	66.0%	66.3%	68.7%	51.9%	43.4%		

consecutive dividend increases, indicating a strong commitment to building a consistent dividend track record. Although these figures describe the distribution of the sample by year and chain length, we also present statistics on the proportion of firms that progress to the next chain length category, called the survival rate. The figure in each cell represents the number of dividend increases with a particular chain length for a particular year. For a particular cell, reading along each right diagonal, the figure in the cell to the lower right is the number of firms that survive and increase the dividend in the following year, thereby extending the dividend chain length by one. For example, 43 dividend increases announced in the year 2002 represent the third consecutive dividend increase. Of these 43 firm-chains, 30 survive by announcing a dividend increase in the following year (i.e., 2003) increasing the chain length to 4, while 24 of these 30 firms survive to announce a further successive increase in 2004. The figure in each cell is smaller than the figure for the previous year and previous chain length (i.e., the figure in the upper left cell) due to firms that fail to extend the chain, and therefore do not survive.[20] We contend that once firms develop a track record of a particular payout policy they tend to persist with the same policy. To measure the extent of dividend persistence we calculate the survival rate for each chain length category and each year, where possible.[21] The survival rate for a particular Chain Length, *i*, where *i* ranges from 2 to 19, is calculated as follows:

$$Survival\ Rate_i = \frac{\sum_{t=2000}^{2009} n_{t,i}}{\sum_{t=1999}^{2008} n_{t,i-1}} \tag{3.1}$$

where $n_{t,i}$ is the number of observations for year *t* and chain length *i*.

[20] A small number of exceptions to the decreasing numbers on the diagonal are caused by the declaration date reported in the following, or prior, year.

[21] We cannot calculate the survival rate for the chain length category '1' because the prior chain length category does not exist. The last survival rate we calculate is for the chain length category '19' because we would require data on the number of observations in chain length category '20', which we do not separately report.

The final column in Table 3.1 reports the survival rate by chain length. Only 46% of firms that announce a dividend increase survive to announce a second increase. With the exception of a slight dip in the survival rate at the eighth dividend increase, the survival rate monotonically increases until the tenth increase, where 84% of the firms that announce a ninth increase go on to announce a tenth increase. For each subsequent dividend increase category this rate remains remarkably stable at approximately 80%. Clearly, the dividend policy of many firms is designed to deliver a pattern of steady dividends to stockholders with regular increases over time. Therefore, the claim made by a large proportion of financial executives that they endeavour to maintain consistency with the historic dividend level is consistent with what is observed in practice.

In addition to investigating the survival rate by chain length we also calculate the survival rate for a particular announcement year *t*, where *t* ranges from 2000 to 2009 as follows:

$$Survival\ Rate_t = \frac{\sum_{i=2}^{19} n_{t,i}}{\sum_{i=1}^{18} n_{t-1,i}} \tag{3.2}$$

The last row of Table 3.1 reveals that the survival rate is fairly stable each year from 2000 to 2007 and varies little from the average rate across this period of 64%. However, the rate decreases markedly in 2008 and then decreases again to 43% in 2009. As we argued earlier, this decrease can be attributed to the onset of the financial crisis in the year 2008.

3.3.3 Characteristics of Repeated Dividend-Increasing Firms

The existing literature shows that abnormal returns around dividend increase announcements are related to a number of firm-specific variables.[22] We consider five such variables that may potentially explain changes in the market reaction to repeated dividend increases. The CRSP/Compustat Merged Database (CCM) is used to extract required accounting data for the most recently announced fiscal year-end that precedes the dividend increase announcement date. The first two variables measure changes in dividends and earnings. *Dividend Change* is the percentage change in the dividend relative to the previous quarter's dividend and *Earnings Change* is the change in the most recent quarterly earnings compared to the prior quarter. The next variable is the market value of equity or *Market Cap*, which is defined as the product of the stock price and the number of shares outstanding at the end of the quarter before the dividend increase announcement. The fourth variable, *Market-to-Book Ratio*, is included as a proxy for the firm's future growth opportunities and is measured as the market value of equity divided by the total stockholder's equity (The latter variable is CCM Data Item: SEQQ). Our final variable, *Leverage Ratio*, is defined as the ratio of total liabilities to total capitalisation where total liabilities is measured as short-term debt (CCM: DLCQ) plus long-term debt (DLTTQ) and total capital is total liabilities plus the market value of equity, as defined above. Table 3.2 reports summary statistics for these five firm characteristic variables. The first dividend increase is, on average, the largest increase and represents a 24.5 percent increase compared to the prior quarter's dividend. Looking down the columns, we note a general decline in the mean and median percent change as the length of the dividend-increase chain increases.

[22] For example, Lang and Litzenberger (1989) and Yoon and Starks (1995).

Table 3.2
Summary Statistics for Initial Sample

The table reports the mean and median values for five firm-specific variables for a sample of 6,840 dividend increases with a declaration date between January 1, 1999 and December 31, 2009 partitioned by Chain Length, which is the number of years of consecutive once-a-year dividend increases. Chain Lengths of twenty or more are combined in a single category labelled '20+'. Dividend change is the change in the dividend relative to the previous quarterly dividend. Earnings change is the difference in quarterly earnings per share for the two most recent quarters prior to the dividend increase, scaled by the stock price at the end of the prior quarter. Market Cap is the market value of equity (in $ millions) and is the product of the stock price and the number of shares calculated at the end of the quarter prior to the dividend increase announcement date. The market-to-book ratio is Market Cap divided by the total stockholder's equity. The leverage ratio is the ratio of total liabilities to total capital where total liabilities is measured as short-term debt plus long-term debt and total capital is total liabilities plus Market Cap. Accounting variable values are for the fiscal quarter end dates that are reported on or before the dividend increase announcement date.

		Dividend change (%)		Earnings Change (%)		Market Cap ($m)		Market-to-book ratio		Leverage ratio	
Chain Length	*n*	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
1	2214	24.5	14.3	0.32	0.21	6494	685	2.90	1.89	0.30	0.25
2	1103	17.1	11.1	0.14	0.18	7052	825	3.06	2.01	0.31	0.28
3	706	14.4	11.1	0.11	0.16	8943	1082	2.77	2.04	0.30	0.26
4	496	12.4	10.0	0.09	0.13	8879	1145	2.97	2.11	0.31	0.27
5	363	11.2	9.9	-0.07	0.12	9689	1232	3.87	2.14	0.29	0.25
6	268	10.8	9.1	-0.02	0.09	9301	1148	2.77	2.10	0.30	0.26
7	220	9.7	8.3	0.04	0.12	8898	1278	6.54	2.10	0.30	0.26
8	174	10.9	8.2	-0.01	0.12	11010	1329	3.39	2.16	0.30	0.27
9	143	10.6	8.3	0.11	0.14	14779	1921	4.27	2.40	0.30	0.28
10	124	11.4	8.6	-0.07	0.14	13405	2329	3.26	2.50	0.30	0.27
11	101	11.4	9.1	0.07	0.11	12057	2199	3.34	2.51	0.28	0.23
12	93	9.3	6.1	0.08	0.07	14962	2722	3.42	2.24	0.28	0.25
13	88	8.1	8.1	0.19	0.09	14573	2639	3.36	2.22	0.27	0.24
14	77	7.7	6.8	-0.06	0.11	15584	2395	3.35	2.45	0.29	0.26
15	66	7.1	6.1	0.13	0.12	17270	2750	2.93	2.10	0.29	0.25
16	60	8.5	6.6	0.08	0.15	16694	3029	2.76	2.15	0.27	0.25
17	50	7.3	5.7	0.09	0.16	11916	3250	2.76	2.29	0.29	0.24
18	45	7.8	5.0	0.19	0.08	7386	2883	2.59	2.12	0.30	0.28
19	44	9.5	4.8	0.20	0.23	7047	2807	2.63	2.04	0.28	0.20
20+	405	7.9	5.9	0.06	0.12	25764	4871	3.52	2.39	0.23	0.18
Total	6840	16.4	10.0	0.15	0.16	9567	1233	3.19	2.06	0.30	0.25

The tendency for the mean change in the dividend to decline for dividend increases that occur later in a dividend-increase chain further motivates a more detailed analysis of the abnormal returns around dividend increase announcements partitioned by the number of previous dividend increases. An early study by Pettit (1972) studies the performance of dividend increases groups by size and finds that increases larger than 25% exhibit returns little different from zero, although the small sample size of twenty-two suggests the result may not be conclusive. Other studies of the market reaction to dividend increases discard an increase from the sample if it is below a certain threshold. For example, Firth (1996), Denis et al. (1994), Yoon and Starks (1994) and Grullon et al. (2002) all use cut-off points ranging from 10% to 12.5% respectively and justify this practice because increases below these levels do not convey significant information.[23] These studies then find that, among the dividend increases larger than the selected threshold, there is a positive relationship between the size of the increase and the magnitude of the abnormal return leading to the conclusion that larger dividend increases have more information content than smaller increases. However, the figures in Table 3.2 reveal that dividend increases that occur early in a chain are larger than those that occur later in a chain. Therefore, the argument that larger dividend increases have more information content may, in part, be explained by the observation that the larger increases tend to be confined to the first few increases in a chain. Partitioning dividend increases by the prior track record exposes this relationship, motivating a need to investigate how the prior dividend track record and the size of the increase are each related to abnormal returns. Indeed, our results demonstrate that, even after controlling for size, the first two dividend increases in a chain are significant.

It is evident from the median figures reported in Table 3.2 that the practice of discarding dividend increases that are under ten percent would eliminate half of the dividend

[23] Grullon et al. (2002) state that the use of smaller thresholds of 10% or 5% does not "appreciably" alter their results.

increases in the fourth chain length category with the proportion increasing in each subsequent chain length category.[24] Consequently, the median dividend increase size would increase substantially and make the results even stronger. To prevent potentially biasing our results when constructing our sample we retain all dividend increases, regardless of the size.

Inspection of the remaining four variables in Table 3.2 indicates that the median market capitalisation tends to increase as the chain length increases. This observation indicates that a longer record of consecutive dividend increases is associated with greater firm equity value. No clear patterns are discernible for the earnings change prior to the increases, the market-to-book ratio or the leverage ratio across chain length categories.

Although the magnitude of the relative change in the dividend declines for longer chain lengths, the figures in Table 3.3 reveal that, in contrast, the absolute change in the dividend across chain length is quite stable. For the full sample the median dividend increase is \$0.011, ranging from a maximum of \$0.015 to a minimum of \$0.01, which is also the median increase from the twelfth increase onwards. The most common increase amount is \$0.01, forming almost one-third (2152 ÷ 6840) of the sample, followed by \$0.02 and \$0.005 as the second and third most commonly occurring increase sizes, respectively. Over 93% of the sample's increases are in multiples of \$0.0025 (i.e., one quarter of one cent). In the remaining 7% of cases, events such as carve-outs and stock splits of a certain ratio announced in the vicinity of a dividend increase lead to changes in the adjustment factor so that the dividend increases are not an integer multiple of \$0.0025, but rather a number that cannot be represented as an integer fraction of a cent. The market may learn to anticipate a dividend increase if the increases are the same dollar amount.

[24] In fact, the (untabulated) proportion of dividend increases that are in excess of ten percent for each of the first three dividend increases in a chain are 62%, 55% and 53%, respectively. For each chain length category from twelve through to eighteen the proportion drops to approximately 25%.

Table 3.3
Dividend Increase Amount Summary Statistics

The table provides characteristics of the dollar amount of the dividend increase classified by Chain Length. Dividend increases are arranged into one of five non-exhaustive size bins (half-a-cent, one cent, two cents, five cents, and greater than five cents). The final column reports the number of dividend increases that are a multiple of one-quarter of a cent.

				Dividend Increase Amount					Multiple
Chain Length	Total	Mean	Median	$0.005	$0.01	$0.02	$0.05	> $0.05	of $0.0025
1	2214	0.023	0.013	215	728	339	87	146	2054
2	1103	0.021	0.011	98	372	177	39	59	1020
3	706	0.020	0.013	64	221	133	24	30	659
4	496	0.019	0.011	54	151	87	22	14	460
5	363	0.020	0.013	43	107	67	6	20	342
6	268	0.018	0.013	39	72	44	9	7	254
7	220	0.017	0.010	25	71	41	6	5	209
8	174	0.018	0.012	17	54	30	2	5	160
9	143	0.020	0.013	14	42	22	2	8	132
10	124	0.020	0.015	15	27	17	3	6	119
11	101	0.020	0.012	13	28	12	3	4	95
12	93	0.017	0.010	10	31	13	0	4	89
13	88	0.016	0.010	14	30	13	1	1	86
14	77	0.015	0.010	8	30	9	1	1	75
15	66	0.015	0.010	11	19	12	1	1	66
16	60	0.017	0.010	6	21	6	2	2	58
17	50	0.015	0.010	5	19	5	3	0	49
18	45	0.016	0.010	8	13	4	0	1	43
19	44	0.020	0.010	6	12	3	1	4	43
20+	405	0.016	0.010	62	104	35	6	8	380
Total	6840	0.020	0.011	727	2152	1069	218	326	6393

For example, if a firm increases its dividend by one cent for ten consecutive years then the market might reasonably expect the firm to continue this increase pattern in the future, particularly based on the evidence on survival rates in Table 3.2 suggesting that firms endeavour to maintain an unbroken dividend track record. To explore the extent of repetitiveness in the dollar increase amount we provide details of the number of times a dividend increase equals the prior increase amount, and all prior increase amounts, in Table 3.4. For each chain length the proportion of increases that are equal to the prior year's increase is quite stable at approximately fifty percent. The remaining increases are split fairly evenly between those that are smaller than prior increases and those that are larger. Of those increases that are larger than the prior increase, a small proportion is larger by one hundred percent, or more. These figures are consistent with those reported in Table 3.3 and indicate

that the dollar amount of the change is fairly consistent, with the dollar increase from one increase to the next displaying little variation. The final column in Table 3.4 lists the number of times that the amount of the increase is equal to all previous increase amounts and indicates that only a small proportion of sample firms maintain an unbroken record of increasing by the same amount every year. Of those firms announcing their second increase, 543 increase the dividend by the same amount as the first increase. By the third increase the number drops to 216. At the time of the tenth increase just six firms have increased the dividend by exactly the same dollar amount for ten consecutive years.

Table 3.4
Frequency Distribution of Dividend Increase Amount

The table reports information on the size of the dividend increase compared to the prior year's increase and all prior increases for the second through to the twentieth dividend increase in a chain. Columns 2 through to 6 compare the size of the dividend increase to the prior year's increase only. For example, for firms announcing the eighth dividend increase in a chain, 83 of the increases are the same size as the seventh increase. The final column compares each sequentially numbered dividend increase to all preceding dividend increases. For example, for firms announcing the eighth dividend increase, twelve of the increases are the same size as the seventh, sixth, and so on through to the first dividend increase.

	Dividend Increase Amount					
	compared to prior increase only					compared to all prior increases
Chain Length	Smaller	Equal	Larger	≤ -50%	≥ 100%	Equal
2	347	543	306	215	151	543
3	188	373	208	112	97	216
4	146	252	122	80	56	102
5	118	176	93	59	32	51
6	63	160	60	30	23	29
7	72	98	55	41	26	19
8	51	83	54	29	19	12
9	37	69	44	19	15	9
10	36	53	42	16	11	6
11	34	44	32	19	14	3
12	33	49	17	20	4	3
13	25	47	24	17	12	3
14	31	45	15	17	8	1
15	22	38	14	12	3	1
16	12	35	17	8	8	1
17	18	22	13	12	8	1
18	12	27	9	6	7	0
19	10	21	14	5	5	0
20	113	187	120	63	50	0
Total	1368	2322	1259	780	549	

3.3.4 Correctly Attributing the Market Reaction to the Increase Announcement

To properly measure the stock market reaction to a dividend increase requires identifying when the announcement is publicly released. CRSP reports the date the dividend was declared by the firm's board of directors, which is not necessarily the same date the information is publicly disseminated. Therefore, dividend increase announcement dates are extracted by searching the newswires using the Factiva database. We investigate press releases in the year leading up to the CRSP-specified Declaration Date to ensure that the increase is not pre-announced. The market reaction to a dividend increase may be tainted if there are other potentially confounding corporate announcements made in the vicinity of the increase. Therefore, to ensure a clean measurement of the stock price reaction to a dividend increase announcement, a dividend increase is discarded from the initial sample if there is another price-sensitive announcement in the period within three business days on either side of the Factiva-reported dividend increase announcement date.[25] Application of this filter results in a final sample size of 2,900 dividend increase announcements during 1999-2009. Thus, slightly higher than forty percent of the full sample of dividend increase announcements is free of other, potentially confounding, announcements. A result of the reduced sample size is fewer chains of between ten and twenty years of consecutive dividend increase announcements. Therefore, in the remainder of the essay all Chain Lengths of ten or more years are combined into a single category referred to as '10+.'

Descriptive statistics for the firm-specific variables for the final sample of 2,900 announcements partitioned by the length of the chain in the announcement year are presented in Table 3.5.

[25] Earnings announcements were the most common type of price-sensitive announcements occurring in the vicinity of dividend increase announcements. Other less common announcements include stock split announcements, stock buyback announcements, special dividend declarations, and other announcements such as lawsuits and divestitures.

Table 3.5
Descriptive Statistics for Dividend Increases without Concurrent News Announcements

The table contains firm-specific descriptive statistics for five variables partitioned by Chain Length, which is the number of consecutive once-a-year dividend increases, for a sample 2,900 quarterly dividend increases announced by US firms between January 1, 1999 and December 31, 2009. Chain Lengths of ten or more are combined in a single category labelled '10+'. Dividend change is the change in the dividend relative to the previous quarterly dividend. Earnings change is the difference in quarterly earnings per share for the two most recent quarters prior to the dividend increase, scaled by the stock price at the end of the prior quarter. Market Cap is the market value of equity (in $ millions) and is the product of the stock price and the number of shares calculated at the end of the quarter prior to the dividend increase announcement date. The market-to-book ratio is Market Cap divided by the total stockholder's equity. The leverage ratio is the ratio of total liabilities to total capital where total liabilities is measured as short-term debt plus long-term debt and total capital is total liabilities plus Market Cap. Accounting information is for the fiscal quarter end date that is reported on or before the dividend increase announcement date.

		Dividend change (%)		Earnings change (%)		Market Cap ($m)		Market-to-book ratio		Leverage ratio	
Chain Length	*n*	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
1	888	21.5	13.3	0.30	0.22	3568	461	2.37	1.84	0.31	0.28
2	471	16.0	11.1	0.12	0.17	4063	540	2.47	1.91	0.32	0.31
3	295	13.7	10.2	0.09	0.16	4826	908	2.51	1.94	0.32	0.31
4	227	10.8	9.1	0.13	0.14	6108	891	2.50	1.93	0.33	0.32
5	162	10.2	8.5	0.08	0.13	6146	1031	2.80	2.00	0.32	0.28
6	131	10.2	8.0	-0.11	0.06	7045	942	2.46	1.98	0.32	0.29
7	113	8.8	8.0	0.15	0.14	6708	1061	2.46	1.88	0.32	0.29
8	83	9.1	7.7	-0.01	0.10	6380	977	3.55	2.05	0.29	0.27
9	60	9.2	7.1	0.06	0.10	4097	940	2.48	2.05	0.31	0.30
10+	470	8.3	6.4	0.13	0.11	6606	2391	2.99	2.23	0.26	0.22
Total	2900	14.6	10.0	0.16	0.15	4982	888	2.58	1.96	0.31	0.28

The number of observations declines with the number of consecutive dividend increases required except for the grouped category of 10+, as firms do not increase in the year following an increase, causing the chain to terminate. Once again, the mean and median market capitalisation of dividend-increasing firms increases with the number of consecutive dividend increases. The mean market-to-book ratio increases with the length of the dividend-increase chain, suggesting that firms with a longer record of dividend increases have higher future growth opportunities compared to firms with shorter dividend records. Mean and median leverage ratios both increase as the number of dividend increases lengthens but peak at the sixth increase and then decreasing slightly with each subsequent increase, giving the relationship a humped shape.

Again, as is the case with the full sample of dividend increases the magnitude of the dividend change declines as the dividend-increase chain lengthens for the final sample. For the first dividend increase, the mean (median) increase is 21.5% (13.3%) and after ten or more consecutive increases the mean (median) dividend change falls to 8.3% (6.4%). The values for the market-to-book ratio, leverage ratio and the dividend change for the filtered sample reported in Table 3.5 are similar in magnitude to the corresponding figures reported for the unfiltered sample of dividend increases in Table 3.2. In addition, for each of the first ten dividend-increase-number categories in Table 3.2, a fairly uniform one-third of the observations qualify for the filtered sample in Table 3.5. However, comparing the market values across the two samples indicates that the mean and median values for the filtered sample are smaller. The median firm has a market value of $888 million, which is smaller than the median market value of $1,233 million for the unfiltered sample. This result indicates that the filter excludes a greater proportion of larger market-value firms compared to smaller market-value firms. Since larger firms tend to disclose more public information, in general, than smaller firms, larger firms will have a greater likelihood of making other types

of corporate announcements in the vicinity of the dividend increase and therefore not qualify for inclusion in the final sample.

3.3.5 Variable Correlations

The value of the correlation coefficient between each variable pair is presented in Table 3.6.

Table 3.6
Correlation Matrix

The table reports the correlation coefficient between each pair of variables for a sample 2,900 quarterly dividend increases announced by US firms between January 1, 1999 and December 31, 2009. CAR is the two-day cumulative risk-adjusted abnormal return. Market cap is the market value of equity (in $ millions) and is the product of the stock price and the number of shares outstanding one trading day before the dividend increase announcement date. The market-to-book ratio is the market value of equity divided by the total stockholder's equity. The leverage ratio is the ratio of total liabilities to total capital where total liabilities is measured as short-term debt plus long-term debt and total capital is total liabilities plus the market value of equity. Dividend change is the change in the dividend relative to the previous quarterly dividend. Earnings change is the change in the most recently announced earnings relative to the previous quarter. Accounting variable values are for the most recent fiscal quarter end date that precedes the dividend increase announcement date.

	CAR	Dividend change	Earnings change	Market cap	Market-to-book ratio	Leverage ratio
CAR	1					
Dividend change	0.045	1				
Earnings change	0.008	0.067	1			
Market cap	0.003	-0.008	-0.022	1		
Market-to-book ratio	-0.014	0.039	0.000	0.158	1	
Leverage ratio	-0.004	-0.086	-0.009	-0.104	-0.306	1

Market Cap and the market-to-book ratio display the highest positive correlation of 0.158. Market Cap and the market-to-book ratio and are negatively correlated with the leverage ratio with correlation coefficients of -0.104 and -0.306, respectively. This negative correlation is not surprising because Market Cap appears in the denominator of the leverage ratio, and in the numerator of the market-to-book ratio. Therefore, increases in values of Market Cap are associated with decreases in the leverage ratio, and vice versa.

3.3.6 Event Study Methodology

The event study methodology is used to measure abnormal returns around each dividend increase announcement with a dividend-increase chain. Day 0 is defined as the event date and is the date of the dividend increase announcement reported in the Factiva database. In most cases, newswires report a dividend increase announcement (i.e., the firm issues a press release) on the same day it is declared by the firm's Board of Directors. In a few cases, the newswires report the increase the day after it is declared by the Board, and on rare occasions the dividend is announced up to two weeks after it is declared.[26] The market reaction to a dividend increase announcement would be expected to occur on the same day it is reported by the newswires. However, to capture the stock price reaction to announcements reported after the close of trading on Day 0, abnormal returns are measured over the two-day window [0, +1].[27] Abnormal returns are estimated using the market model as:

[26] In the latter case, this delay may be due to a CRSP error, or that the Board meets to declare the increased dividend on a particular day but instead of publicly declaring the dividend increase on the same, or the next, day, it is declared some days later.

[27] Some studies of dividend changes examine abnormal returns around the three-day event window [-1, +1]. These studies typically source announcement dates from the Wall Street Journal Index (WSJI) which contains condensed versions of the original newspaper article reported in the Wall Street Journal (WSJ). A dividend increase announcement made after the WSJ is published, would at the earliest, appear in the following day's edition. Therefore, the announcement date would typically precede the WSJI date by one day. However, there is no reason to expect a stock price reaction before the announcement date when sourced from the newswires and therefore abnormal returns are measured over the two-day event window [-1, 0]. In fact, the results are obtained from using a two-day event window are similar to those for the three-day window.

$$AR_{i,t} = R_{i,t} - (\alpha_i - \beta_i R_{m,t}) \quad (3.3)$$

where $AR_{i,t}$ is the abnormal return for stock i for day t, $R_{i,t}$ is the return on stock i for day t, $R_{m,t}$ is the return on the CRSP value-weighted market index for day t, α_i and β_i are the estimates of the intercept and slope respectively for stock i from a market model regression estimated using a maximum estimation length of 255 trading days and a minimum estimation length of 30 trading days computed from data over the interval [-264, -10] relative to the dividend increase announcement date.[28] The 2-day cumulative abnormal return for stock i, $CAR_i[0, +1]$, is the sum of the abnormal return for day 0 and day 1 where:

$$CAR_i[0, +1] = AR_{i,0} + AR_{i,1} \quad (3.4)$$

3.4. Results

3.4.1 Effect of the Dividend-Increase Number on Abnormal Returns

Mean abnormal returns for the two-day dividend increase announcement period partitioned by Dividend Increase Number are reported in Table 3.7. The overall mean risk-adjusted abnormal return is 0.19%, and highly significant. This figure compares with Dielman and Oppenheimer (1984) who investigate dividend increases that exceed twenty-five percent and document a mean abnormal return of 2.52% while Yoon and Starks (1995) using a lower cut-off figure of ten percent report a lower mean abnormal return of 0.95%. However, the evidence of variation in dividend-increase announcement period abnormal returns over time documented by Amihud and Li (2006) suggests that the abnormal return figures from studies that use different sample periods may not be directly comparable.

[28] Grullon et al. (2002) subtract the return on the value-weighted market index from the stock return to measure abnormal returns and obtain similar results when they use the equal-weighted market index instead of the value-weighted market index.

Table 3.7
Mean Abnormal Return

This table reports the two-day abnormal return, CAR, (expressed in percent) around the dividend increase announcement date for a sample of 2,900 dividend increase announcements with a declaration date between January 1, 1999 and December 31, 2009 classified by the consecutively-numbered dividend increase. The dividend increase announcement is the only price-sensitive announcement that occurs in the three trading days on either side of the announcement date. Chains of ten or more consecutive annual dividend increases are combined in a single category labelled '10+'. The column headed 'ΔDPS < median' contains the mean abnormal return for each dividend-increase number for increases that are smaller than the median increase for that particular dividend-increase number category. A similar explanation applies to the column headed 'ΔDPS ≥ Median'. We use the equality in the latter size category because when we use the median change as a breakpoint there is not always the same number of observations in each of the two categories when multiple increases are of an amount that is also equal to the median increase amount. For example, in the second dividend-increase category there are 231 increases that are smaller than the median and 240 that are greater than the median, and for the overall sample the corresponding numbers are 1,437 and 1,463. *, **, and *** denote statistical significance at the 10%, 5% and 1% levels, respectively.

		Overall		ΔDPS < Median		ΔDPS ≥ Median	
Dividend Increase #	*n*	CAR	Z-stat	CAR	Z-stat	CAR	Z-stat
1	888	0.370	3.09***	0.252	2.13**	0.488	3.43***
2	471	0.316	2.77***	0.252	1.41	0.378	2.50**
3	295	-0.174	-0.99	-0.330	-2.00**	-0.020	0.59
4	227	-0.028	-0.47	0.224	0.32	-0.269	-0.97
5	162	0.156	0.65	0.008	0.01	0.305	0.90
6	131	0.193	1.16	0.542	2.15**	-0.151	-0.50
7	113	0.031	-0.07	-0.090	-0.35	0.151	0.25
8	83	0.533	1.74*	0.887	1.79*	0.187	0.68
9	60	0.052	0.71	0.367	1.28	-0.224	-0.22
10+	470	0.089	0.72	0.009	-0.05	0.169	1.07
TOTAL	2900	0.194	3.92***	0.157	2.05**	0.231	3.48***

A previously unreported finding emerges when we partition the sample by the order of each increase within a chain of increases and motivates this study. The announcement of the first dividend increase is associated with a significantly positive abnormal return of 0.37%, suggesting that these announcements are not anticipated. At the announcement of the second increase the magnitude of the abnormal return declines to 0.32%, representing a decline in size and statistical significance compared to the first increase. With the exception of the eighth dividend increase being marginally significant, the third and all subsequent increases display abnormal returns that are not statistically different from zero. These results suggest that the first and second consecutive dividend increases are unexpected, and that by time the third, or later, consecutive dividends are announced, the increases are largely expected. The pattern of declining abnormal returns the more often the announcement has

been repeated is consistent with the findings of Pilotte and Manuel (1996) for repeated stock splits and of Iqbal (2008) for repeated seasoned equity offer announcements and suggests that the number of times a corporate finance event has been repeated in the past is an important determinant of the magnitude of the market reaction. To further explore the relationship between the number of increases and the size of the increase we separate the observations in each dividend-increase number category into two based on the median increase for that particular dividend-increase number, and report the results in the remaining columns of Table 3.7. Although both subsamples of increases exhibit significantly positive returns overall, larger increases are associated with abnormal returns that are higher at 0.23% and stronger in significance than smaller increases at 0.16%. For the group of increases larger than the median the highest returns are confined to the first and second consecutive increases, and are also the only categories that are significant. Smaller-sized increases are significantly positive for first-time dividend increases becoming insignificant by the second increase. These findings provide tentative evidence that abnormal returns are not only related to the size of the dividend increase as documented by prior research, but also to the number of previous occurrences of a dividend increase.

Table 3.8
Mean Abnormal Return by Dividend Increase Amount

The table reports the mean abnormal return around the dividend increase announcement date partitioned by the dividend increase number and the magnitude of the increase compared to the prior increase amount. The dividend increase number ranges from two to ten. The table starts at the second dividend increase because the first dividend increase, by definition, is not preceded by an increase. *, **, and *** denote statistical significance at the 10%, 5% and 1% levels, respectively.

	Dividend increase amount compared to prior increase amount								
	Smaller			Equal			Larger		
Dividend Increase #	*n*	CAR	Z-stat	*n*	CAR	Z-stat	*n*	CAR	Z-stat
2	135	-0.122	-0.10	232	0.452	2.72***	104	0.582	1.95*
3	81	-0.323	-1.56	138	-0.244	-0.73	76	0.111	0.24
4	68	-0.119	-0.45	118	0.185	0.42	41	-0.490	-1.22
5	45	0.311	1.13	78	0.209	0.45	39	-0.129	-0.54
6	29	-0.792	-1.18	76	0.594	2.34**	26	0.119	-0.14
7	33	0.322	0.22	56	-0.124	-0.55	24	-0.006	0.44
8	24	0.325	0.70	40	0.876	1.73*	19	0.072	0.33
9	16	0.166	0.04	27	0.380	1.38	17	-0.578	-0.44
10	125	0.327	1.37	230	0.118	0.90	115	-0.226	-1.25
Total	556	0.004	0.10	995	0.221	2.84***	461	0.027	0.09

In Table 3.8 we further decompose the figures in Table 3.7 and split each dividend-increase number into three categories depending on whether the increase is smaller, equal to, or larger than the previous increase. There is no corresponding dividend increase prior to the first increase in a chain and therefore statistics are presented starting with the second dividend increase, Dividend Increase # 2. For the second increase returns are a significant 0.58% when the increase is larger than the prior year's increase amount compared to the smaller 0.45% highly significant return when the dividend is increased by the same amount as the previous year. Nearly all remaining abnormal returns listed in Table 3.8 are not significantly different from zero.

3.4.2 Multivariate Results

As reported in Table 3.7, abnormal returns are positive and significant for the first two consecutive dividend increases in a chain, but are generally not significantly different from zero for subsequent increases. Further, as documented in Table 3.5, the first two increases are, on average, the largest and the magnitude of the increase becomes progressively smaller with each successive increase. However, existing literature documents a negative relationship between the magnitude of a dividend increase and the size of the abnormal return. Therefore, it is possible that the reduction in returns we observe is not explained by repeated dividend increase announcements but a reflection of the fact that the increases are getting smaller. We also document that the size of the increase is smaller with each successive increase. Similarly, existing studies show that the size of the firm is negatively related with returns around dividend increases, and we note that firm size consistently increases with each dividend increase. Again, our identification of lower returns for longer dividend-increase histories may simply be picking up the fact that the size of the firm is increasing, and therefore returns are lower. Therefore, to control for the size of the firm and the magnitude of the dividend increase we construct a multivariate regression model. Yoon and Starks (1995) and Lang and Litzenberger (1989) find a difference in abnormal returns around dividend increase announcements depending on the market-to-book ratio which motivates the inclusion of this particular variable in the model. The firm's leverage ratio is included following the evidence of Barth et al. (1999) that firms with at least five years of annual earnings increases have significantly lower debt-equity ratios than other firms. Therefore, we use a regression model to determine if the position of the dividend increase within a chain is an important determinant of abnormal returns after controlling for four firm-specific variables. The following equation is estimated:

$$CAR = \beta_0 + \beta_1 \Delta DPS + \beta_2 \Delta EPS + \beta_3 MVE + \beta_4 MBR + \beta_5 LVR + \sum_{i=1, i\neq 5}^{10+} \gamma_i DINUM_i \qquad (3.5)$$

where CAR is the 2-day announcement period abnormal return as defined in Equation (3.4), ΔDPS is the size of the dividend increase, ΔEPS is the change in earnings per share, MVE is the natural logarithm of the market value of the firm's equity, MBR is the firm's market-to-book ratio, and LVR is the firm's market-leverage ratio. $DINUM_i$ is a dummy variable with a value of one if the dividend increase is the *i*th consecutive increase in a dividend-increase chain, and zero otherwise. The dummy variable that represents three consecutive dividend increases is excluded from Equation (3.5) in order to prevent multicollinearity among the dummy variables that would otherwise occur. The results of estimating five single-variable specifications of Equation (3.5), and the complete equation, are presented in Table 3.9. Model 1 indicates that the size of the dividend increase (ΔDPS) is significantly positively related to the magnitude of the announcement-period abnormal returns, consistent with prior research. The significant negative coefficient on the market value of equity (MVE) reported for Model 3 suggests that the information contained in a dividend increase announcement is more important for small firms than for large firms. This difference in dividend increase expectations may simply be driven by the more frequent information releases and greater analyst coverage of large market-value firms. The coefficient estimates of the three remaining univariate models (Models 2, 4 and 5) indicate that abnormal returns are not significantly related to the earnings-per-share change (ΔEPS), market-to-book ratio (MBR) or the leverage ratio (LVR), respectively. Estimated coefficients for the multivariate model in Equation (3.5) are presented as Model 6 in Table 3.9. Compared to their respective single-variable models, the coefficient of the market value of equity remains significantly negative.

Table 3.9
Single and Multivariate Analysis of Abnormal Returns

The table reports the results of estimating five different specifications of the equation:
$CAR = \beta_0 + \beta_1 \Delta DPS + \beta_2 \Delta EPS + \beta_3 MVE + \beta_4 MBR + \beta_5 LVR + \sum \gamma_i DINUM_i$
for a sample of 1,535 dividend increases announced between January 1, 1999 and December 31, 2006. CAR is the two-day cumulative risk-adjusted abnormal return, CAR[0, +1]. ΔDPS is the size of the dividend increase compared to the previous quarter's dividend; ΔEPS is the change in earnings per share for the most recent quarter prior to the dividend increase announcement, scaled by the stock price; MVE is the natural logarithm of the market value of equity (in $ millions) where the market value of equity (MVE) is calculated as the product of the stock price and the number of shares outstanding one trading day before the dividend increase announcement date; the leverage ratio (LVR) is calculated as total current liabilities plus total non-current liabilities divided by the sum of total current liabilities, total non-current liabilities and MVE; The market-to-book ratio (MBR) is calculated as MVE divided by total stockholders' equity; and $DINUM_i$ is a dummy variable that equals one if the dividend increase represents the *i*th consecutive annual increase where *i* ranges from 1 to 10+ (i.e., ten or more) and $DINUM_3$ is the omitted dummy variable. The row headed 'R-squared' reports the adjusted R-squared. Two-tailed t-statistics are in parentheses. *, **, and *** denote statistical significance at the 10%, 5% and 1% levels, respectively.

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Constant	0.106 (1.72)*	0.192 (3.81)***	1.976 (3.78)***	0.229 (3.42)***	0.210 (2.48)**	1.686 (2.70)***
ΔDPS	0.604 (2.41)**					0.494 (1.89)*
ΔEPS		1.673 (0.45)				0.279 (0.07)
MVE			-0.087 (-3.42)***			-0.089 (-3.13)***
MBR				-0.013 (-0.78)		-0.002 (-0.13)
LVR					-0.051 (-0.23)	-0.257 (-1.06)
$DINUM_1$						0.454 (2.49)**
$DINUM_2$						0.444 (2.23)**
$DINUM_4$						0.161 (0.68)
$DINUM_5$						0.361 (1.38)
$DINUM_6$						0.391 (1.38)
$DINUM_7$						0.254 (0.86)
$DINUM_8$						0.743 (2.22)**
$DINUM_9$						0.239 (0.63)
$DINUM_{10+}$						0.364 (1.80)*
R-squared	0.002	<0.001	0.004	<0.001	<0.001	0.005
F-statistic	5.76	0.65	11.69	0.61	0.82	2.05**

Turning to the main variable of interest in this study, the dividend increase number, we find results broadly consistent with the univariate results reported in Table 3.7. $DINUM_1$ and $DINUM_2$ are both positive at approximately 0.45%, and significant, confirming that the first and second annual dividend increase announcements convey favourable information. By the third increase, returns are much smaller in magnitude and not significantly different from zero consistent with this category of dividend increase announcements being expected by the market. All remaining coefficient of DINUM are not significant with the exception of the eighth increase which is significant at the ten percent level. Table 3.1 indicates that once firms attain a record of eight consecutive annual dividend increases, approximately eighty per cent of firms deliver a further increase, extending the chain length by one. This statistic, combined with the knowledge from Lintner (1956) that firms seek to supply a stable pattern of dividend payments, suggests that, with a high probability, once a firm has delivered seven consecutive dividend increases, an eighth increase may signal that the firm will continue to increase dividends in the future and aim to attain a record of ten consecutive annual increases. Such a track record length is important for firms to be declared a "Dividend Achiever." An insignificant abnormal return at the announcement of the eighth, ninth and tenth increase is consistent with these increases being expected.

3.4.3 Sensitivity Analysis

To examine if the results reported in the previous section are robust to the sample construction technique, a number of modifications are made to the original sample and Equation (3.5) is then estimated. The first robustness test is to exclude observations when the stock did not trade on the dividend increase announcement date and this requirement

decreases the sample size to 2,791 dividend increase announcements.[29] The results presented in Table 3.10 under the column heading 'Model 1' are little changed compared to the results reported for the full sample of 2,900 dividend increases. The significance levels and magnitude attached to each of the dummy variables that represent the number of consecutive increases are marginally lower compared to the full sample. The second robustness test excludes from the sample dividend increase announcements that occur within 365 days of the termination of a dividend-increase chain. As explained earlier, firms can have multiple dividend-increase chains. The motivation for this second sensitivity check is to require that the firm remains out of the sample for one year before the identification of a 'new' dividend increase chain can commence. The results for 'Model 2' reveal that the magnitude of the first and second increase in the chain is 0.52% and 0.62%, respectively. These figures are higher than the corresponding coefficients reported in Model 1, but have a lower significance level. The third robustness check uses year fixed effects to control for any time trend that might exist in abnormal returns. The results listed under 'Model 3' that the first two dividend increases remain significant at the ten percent level. All coefficients and significance levels for Model 3 are broadly similar to the figures reported in Table 3.9. These robustness checks confirm our finding that the first two dividend increases in a chain of increases are associated with significantly positive returns, and that subsequent increases exhibit returns no different from zero.

[29] We identify non-trading days as days when the CRSP-reported stock price (PRC) is negative, indicating that the stock price is imputed to be the average of the bid and ask prices.

Table 3.10
Robustness Checks

The table reports the results of estimating the equation:
$CAR = \beta_0 + \beta_1 \Delta DPS + \beta_2 \Delta EPS + \beta_3 MVE + \beta_4 MBR + \beta_5 LVR + \sum \gamma_i DINUM_i$
for four different samples of dividend increases with a declaration date between January 1, 1999 and December 31, 2009. CAR is the two-day cumulative market-adjusted return, CAR[0, +1], ΔDPS is the size of the dividend increase compared to the previous quarter's dividend; ΔEPS is the change in earnings per share for the most recent quarter prior to the dividend increase announcement, scaled by the stock price; MVE is the natural logarithm of the market value of equity; MBR is the market-to-book ratio; LVR is the leverage ratio;, and $DINUM_i$ is a dummy variable that equals one if the dividend increase represents the *i*th consecutive annual increase where *i* ranges from 1 to 10 (where '10' consists of ten or more consecutive dividend increases) and $DINUM_3$ is the omitted dummy variable. Model 1 reports the regression results for the sample of dividend increase announcements where the announcing firm's stock trades on the dividend increase announcement date. Model 2 reports the results excluding firms in the utilities or financial industry sector. Model 3 includes year fixed-effects. The row headed 'R-squared' reports the adjusted R-squared. Two-tailed t-statistics are in parentheses. *, **, and *** denote statistical significance at the 10%, 5% and 1% levels, respectively.

Variable	Model 1	Model 2	Model 3
Constant	1.406	2.276	1.809
	(2.18)**	(2.22)**	(2.81)***
ΔDPS	0.439	0.276	0.537
	(1.67)*	(0.81)	(2.04)**
ΔEPS	0.812	1.879	0.970
	(0.22)	(0.38)	(0.26)
MVE	-0.076	-0.111	-0.092
	(-2.58)**	(-2.35)**	(-3.15)***
MBR	-0.001	0.001	-0.001
	(-003)	(0.07)	(-0.04)
LVR	-0.221	-1.113	-0.283
	(-0.90)	(-2.14)**	(-1.16)
$DINUM_1$	0.415	0.522	0.446
	(2.25)**	(1.76)*	(2.43)**
$DINUM_2$	0.431	0.617	0.452
	(2.13)**	(1.68)*	(2.26)**
$DINUM_4$	0.182	0.239	0.168
	(0.76)	(0.62)	(0.71)
$DINUM_5$	0.254	0.594	0.321
	(0.96)	(1.38)	(1.22)
$DINUM_6$	0.426	0.215	0.390
	(1.50)	(0.47)	(1.38)
$DINUM_7$	0.249	-0.077	0.259
	(0.83)	(-0.15)	(0.86)
$DINUM_8$	0.632	0.644	0.700
	(1.85)*	(1.18)	(2.09)**
$DINUM_9$	0.199	0.538	0.229
	(0.52)	(0.81)	(0.60)
$DINUM_{10+}$	0.344	0.452	0.356
	(1.70)*	(1.44)	(1.76)*
Year Fixed Effects	No	No	Yes
n	2,791	1,270	2,900
R-squared	0.003	0.005	0.006
F-statistic	1.51*	1.44	1.68**

A potential explanation for the insignificant announcement-period abnormal returns around the third and subsequent dividend increases is that the market has learnt to expect an increase, and so when the increase is announced it has no information content. To further explore the possibility that the market learns to anticipate dividend increases by a firm with a regular dividend-increasing habit, we study the period leading up to the announcement to investigate if abnormal returns have simply have shifted from the two-day announcement period to a period before the increase is announced. We then study abnormal returns in the five days preceding the announcement and the five following days. To ensure that we correctly attribute the market reaction to the dividend increase only, we extend the window that we use to determine if an announcement is free of contemporaneous announcements from three days either side of the increase to six days. The use of a wider window causes a reduction in the sample size from 2,900 to 2,175 but allows us to investigate if any stock price run-up exists.

Table 3.11
Abnormal Return for Different Announcement Period Window Lengths

The table reports abnormal returns for a sample of 2,175 dividend increase announcements with no other price-sensitive press releases in the six business days that extend either side of the date the dividend increase is deemed to be become to public knowledge, Day 0.

Dividend Increase #	*n*	CAR[-5, -1]	Z-stat	CAR[0, +1]	Z-stat	CAR[+2, +5]	Z-stat
1	683	0.165	0.07	0.401	3.59***	0.155	1.74*
2	361	-0.242	-1.01	0.425	3.09***	0.321	1.01
3	216	0.011	-0.40	-0.168	-0.73	-0.283	-0.84
4	178	-0.890	-2.68**	-0.030	-0.54	0.434	1.70*
5	125	-0.177	-0.06	0.088	0.42	0.551	1.86*
6	97	-0.828	-1.97*	0.418	1.93*	0.099	0.03
7	90	0.139	0.26	-0.171	-0.85	0.179	0.27
8	65	0.437	-0.23	0.662	1.89*	-0.298	-0.42
9	46	-0.098	0.21	0.016	0.63	-0.194	-0.62
10+	314	-0.031	-0.12	0.067	0.58	0.243	0.95
TOTAL	2175	-0.095	-1.51	0.224	3.36***	0.175	2.12**

Table 3.11 presents abnormal returns for three non-overlapping time periods. The five-day pre-announcement period starts five days before the dividend increase announcement and ends the day before the announcement (i.e., [-5, -1]), the two-day announcement period includes the announcement date (Day 0) and the following day (i.e., [0, +1]) and the post-announcement period starts two days after the announcement and ends another four days later (i.e., [+2, +6]). Announcement period abnormal returns continue to remain significant, but are slightly higher at 0.22% compared to 0.19% in Table 3.7. Again, as is the case in the prior sample, the highly significant returns are confined to the first two consecutive dividend increases. However, there is no evidence that the market is anticipating the increase as would be evident by positive abnormal returns leading up to the announcement. In the pre-announcement period abnormal there is no consistent pattern of significantly positive abnormal returns before the announcement. Overall, returns are not significant and the largest returns leading up to the increase announcement are reserved for the fourth consecutive increase but at a significantly negative -0.89% are in the opposite direction to the positive abnormal returns that might be expected in the event the market expects the increase. The lack of positive abnormal returns leading up the dividend increase announcement provides no support for the hypothesis that expectation of the increase is impounded into the stock price before the announcement.

For completeness we estimate Equation (3.5) using the updated sample and Table 3.12 contains the results.[30] The estimated coefficients are broadly similar those reported in Table 3.11. The coefficient and the significance level attached to the first and second dividend increases are each slightly larger than the corresponding figures contained in Table

[30] We do not estimate models with a single explanatory variable, as we did in Table 3.9 since our primary motivation for analysing this particular sample is to study returns surrounding the dividend increase announcement.

3.11. Firm size, proxied by the market value of equity, decreases in significance from one percent to five percent, and the size of the dividend change is now no longer significant.

In summary, the robustness checks further support our findings that positive abnormal returns are confined to particular ordered dividend increases only. This result is consistent with the hypothesis that by the second dividend increase the market learns to expect subsequent increases and when the increase is announced there is little market reaction. This suggests that there is little information content in later increases, not because subsequent increases tend to be smaller in percentage terms, but simply that the market becomes accustomed to the increases.

Table 3.12
Multivariate Analysis of Abnormal Returns for Wider Announcement Period Window

The table reports the results of estimating the equation:
$CAR = \beta_0 + \beta_1 \Delta DPS + \beta_2 \Delta EPS + \beta_3 MVE + \beta_4 MBR + \beta_5 LVR + \sum \gamma_i DINUM_i$
for a sample of 2,175 dividend increases with a declaration date between January 1, 1999 and December 31, 2009. There is no other price-sensitive information in the six business days either side of the date the increase is disseminated on the newswires, which is when the increase is deemed to be become public knowledge. CAR is the two-day cumulative market-adjusted return, CAR[0, +1]; ΔDPS is the size of the dividend increase compared to the previous quarter's dividend, ΔEPS is the change in earnings per share for the most recent quarter prior to the dividend increase announcement, scaled by the stock price; MVE is the natural logarithm of the market value of equity, MBR is the market-to-book ratio, LVR is the leverage ratio, and $DINUM_i$ is a dummy variable that equals one if the dividend increase represents the *i*th consecutive annual increase where *i* ranges from 1 to 10 (where '10' represents ten or more) and $DINUM_3$ is the omitted dummy variable. The row headed 'R-squared' reports the adjusted R-squared. *, **, and *** denote statistical significance at the 10%, 5% and 1% levels, respectively.

Variable	
Constant	1.548
	(2.05)**
ΔDPS	0.516
	(1.61)
ΔEPS	-0.269
	(-0.06)
MVE	-0.081
	(-2.33)**
MBR	-0.007
	(-0.35)
LVR	-0.358
	(-1.27)
$DINUM_1$	0.486
	(2.24)**
$DINUM_2$	0.551
	(2.33)**
$DINUM_4$	0.154
	(0.55)
$DINUM_5$	0.285
	(0.92)
$DINUM_6$	0.615
	(1.83)*
$DINUM_7$	0.584
	(0.17)
$DINUM_8$	0.868
	(2.23)**
$DINUM_9$	0.210
	(0.47)
$DINUM_{10+}$	0.337
	(1.37)
Year Fixed Effects	Yes
n	2175
R-squared	0.005
F-statistic	1.80**

3.5 Conclusion

We investigate if there is any evidence of market learning in the case of dividend increases. To explore this hypothesis we study a firm's dividend track record prior to an increase and identify firms with a habit of announcing consecutive once-a-year dividend increases. Studies of other corporate finance events support the hypothesis that the market learns to expect an event if the event has already been repeated a number of times. Given the well-known stickiness of dividends, dividend increases are an event well-suited to prediction since firms tend to adhere to the same dividend policy, particularly once the policy is established. Our results indicate that the market reaction to dividend increases is positive and significant for the first and second dividend increase and then becomes insignificant for subsequent increases. This is an interesting result in that it suggests that the positive effects of dividend increases are confined to the first and second instances of an increase. This is intuitively plausible in that market participants should be able to anticipate dividend increases by firms that have a long history of them. However, it is somewhat surprising that it should happen so quickly.

We also find that a difference in abnormal returns depending on the location of a dividend increase within a chain of increases remains after controlling for other determinants of the market reaction such as market capitalisation, the market-to-book ratio, leverage, and size of the dividend change, and is robust to several different sample construction methods. It is clear that the conventional method of grouping together all dividend increases obscures this result. Our investigation of dividend increases illustrates that the prior dividend track record is a key determinant to help better understand the magnitude of abnormal returns in response to dividend increase announcements.

Chapter 4

Are all Dividends Created Equal? Australian Evidence of Dividend-Increase Track Records

4.1 Introduction

Dividend changes offer a way for the market to gauge managers' confidence on their firm's future prospects (Miller and Modigliani, 1961). Because firms aim to maintain a stable dividend payment pattern over time (Lintner, 1956), a deviation from an established dividend pattern should convey new information. This view is supported by the evidence of abnormal returns around dividend change announcements (Pettit, 1972, Aharony and Swary, 1980). However, a natural question to ask is whether the market's reaction to a dividend change depends on the past dividend history. We fill a gap in the dividend literature and examine abnormal returns around each dividend increase for a sample of firms with a track record of repeated annual dividend increases to understand if the information content of dividend increases varies.

Managers place a high priority on providing stockholders with a stable dividend stream (Brav et al, 2005). This stability, combined with empirical evidence that dividend increases are announced at regular intervals (Bessembinder and Zhang, 2014), will naturally lead to long dividend-increase sequences. A dividend change by such a firm can been interpreted as an indicator of its prospects (Miller and Modigliani, 1961). However, we hypothesise that each dividend increase in a series of increases does not convey the same information which would translate into differences in the magnitude of abnormal returns. In particular, dividend changes by firms with an established dividend pattern may not convey

new information if the established pattern is expected to continue. If this line of reasoning is correct, the practice in past studies of constructing a sample of dividend increases assumes each announcement conveys the same level of information and averages away any differences in abnormal returns that may exist. By instead analysing each dividend increase by its ordered position within a track record of consecutive dividend increases, we can determine whether there are differences in the level of information that is conveyed by dividend increases that are series-dependent. To investigate this hypothesis, we identify track records of consecutive dividend increases for a sample of Australian firms during 1994 to 2013 and examine the announcement period abnormal returns partitioned by the number of prior consecutive dividend increases. After controlling for the simultaneously announced earnings information and firm characteristics, we find that abnormal returns are significantly positive for the first three dividend increases in a series. In general, our results support the hypothesis that the level of information conveyed by an announcement diminishes the more often the announcement occurs. Returns are also significant for the ninth increase suggesting that there is some special type of information conveyed by firms approaching a decade-long record of dividend increases.

The essay is laid out in the following way: Section 4.2 provides the motivation for the study. Related research is discussed in Section 4.3. Section 4.4 explains the sample construction and methodology. Section 4.5 presents the empirical results and Section 4.6 concludes.

4.2 Motivation

Studies of the stock price behaviour in response to dividend increase announcements document significant positive abnormal returns for a two, or three-day, window surrounding the event (e.g., Pettit, 1972, Aharony and Swary, 1980). There is also evidence that the magnitude of the announcement-period return is related to the size of the dividend increase, and to firm characteristics such as the market-to-book ratio and the size of the firm. However, existing studies do not recognise that the stock market's reaction to a dividend increase may differ depending on how often and how regularly the dividend has been increased in the past. Indeed, the conventional method of grouping all dividend increases together implicitly assumes that the market response to dividend increases does not depend on the pattern of prior dividend payments.

Surveys by Lintner (1956) and Brav et al. (2005) indicate that most managers attempt to implement a policy of steadily increasing dividends while avoiding dividend decreases. As a result, dividends are increased only when management feels confident that the higher dividend level can be at least maintained in the future. In keeping with this preference, Lintner develops a model that relates the current dividend to past dividends and incorporates a target dividend payout ratio and a speed-of-adjustment factor.

Evidence by Fama and Babiak (1968) indicates that firms exhibit dividend policies consistent with Lintner's (1956) model. Armed with the knowledge that firm managers will endeavour to steadily increase dividends over time, the market may anticipate further dividend increases by a firm that has already established a pattern of dividend increases. Consequently, when future dividend increases are announced, the stock price may be unaffected if the market has learned to expect the dividend increase. On the other hand, when

a dividend increase is announced by a firm without any previous dividend increases, the stock price movement should be significant because the announcement conveys new information.

Early studies of dividend increases do not condition on the previous dividend pattern. However, a dividend increase may be more expected, conditional on a prior pattern of regular dividend increases. Similarly, a dividend increase would be more unexpected if it were preceded by a series of unchanged dividends. The logic of using prior dividends to identify a sample of unexpected increases is used by Dielman and Oppenheimer (1984) and Baker and Wurgler (2012). Other studies (Charitou et al., 2011; DeAngelo et al., 1992) use the dividend history as a way to help assess the reliability of an earnings change. However, the two studies do not consider the pattern of dividend payments, just the length. The identification of patterns of regular dividend increases allows us to calculate returns around each increase in the pattern to then determine if the information content of an increase varies across each increase.

We find positive and significant abnormal returns surrounding the first, second, and third dividend increase. However, abnormal returns surrounding later increases are typically not significantly different from zero. Our results suggest that the information content of a dividend increase has evaporated by the time of the fourth increase. We also find that abnormal returns are highly significant surrounding the ninth increase. Since certain mutual funds and indices recognise Australian firms that exhibit ten years of consecutive increases as a distinct group, this finding suggests that as firms approach this milestone the market reacts positively.[31] Taken as a whole, our findings indicate that all dividend increases are not created equal and the information content depends on the position of the increase within a sequence of consecutive increases.

[31] For example, the SPDR S&P Global Dividend Fund holds Australian stocks with a ten-year history of increasing or stable dividends.

4.3. Prior Literature

Numerous studies find that dividend increase announcements are, on average, associated with positive abnormal returns (Pettit, 1972, Aharony and Swary, 1980). Other studies provide evidence that these returns are related to various firm characteristics. Some of the variables found to be significantly related to announcement-period abnormal returns include dividend yield, firm size and the size of the dividend change (Yoon and Starks, 1995), investor's dividend preferences (Li and Lie, 2006), return on assets and systematic risk (Grullon et al., 2002), and the level of institutional ownership (Amihud and Li, 2006). A few studies consider that dividend and earnings changes are more informative about the firm's prospects within the context of the prior history (DeAngelo et al., 1992; Charitou et al., 2011), but no current study considers that returns around a dividend change may be associated with the length of the prior dividend track record.

Our analysis of dividend-increase patterns is partly motivated by studies of other common corporate events that indicate that the information conveyed by the event is not the same for each successive occurrence of the event. Decreasing abnormal returns the more times the event has been repeated have been documented for stock splits (Pilotte and Manuel, 1996), seasoned equity offerings (D'Mello et al., 2003), rights issues, (Iqbal, 2008), and accounting write-offs (Elliott and Hanna, 1996). These results are consistent with each successive announcement having less information content, and motivates our analysis of dividend-increase track records. Conventional studies, which group all dividend increase announcements together, implicitly assume there is no difference in information content for each announcement and hence no difference in average abnormal returns. Our study categorises each dividend increase by its order within a track record, allowing us to uncover any sequence-dependent differences in returns. Dividend increases recur at regular intervals (Bessembinder and Zhang, 2014), making them predictable. We suggest that the

predictability increases when a pattern of regular dividend increases emerges, leading to the increase becoming anticipated. In this case, abnormal returns should become insignificant after the firm has increased the dividend a particular number of times.

Some studies use the track record prior to a dividend change to classify the change as expected or unexpected. For example, Dielman and Oppenheimer (1984) reason a dividend increase is unexpected when preceded by at least eight quarters of unchanged dividends and Jensen et al. (2010) argue that a dividend decrease is more unexpected, and consequently has more information content, when it is preceded by a five-year history of positive non-decreasing dividends. We also agree that the expectation of a dividend change is related to the track record, but rather than using track records of one particular length we propose that there are different degrees of expectation and the level of expectation is systematically related to the pattern and the length of the track record. Estimating abnormal returns around each increase in a track record will reveal if and when expectations change.

Evidence also shows that the dividend history is used to assess the reliability of an abrupt change in earnings. DeAngelo et al. (1992) analyse a sample of firms with a ten-year record of positive earnings and dividend payments that then announce a loss. They conclude that a dividend cut by these firms is an indicator that the firm's future prospects are poorer compared to firms that do not cut the dividend. For firms with a seven-year history of positive dividend and earnings, lower earnings is not a reliable indicator of future earnings (Charitou et al., 2010). However, when the dividend is also cut, the ability of earnings to predict future earnings improves. These studies identify a history of positive dividends, and do not consider the pattern of dividends prior to the cut. For example, the market reaction to a cut may be different if the dividend was cut (and therefore still being classified as a positive dividend) in the prior quarter. Based on these results, we hypothesise that dividend increases also convey different levels of information depending on the prior dividend record. By

examining returns around each dividend increase in a track record, rather than grouping all increases together, allows us to determine the point in the record where the information content changes.

The high priority placed by managers on maintaining a dividend that is consistent with historical dividends (Brav et al., 2005) should manifest itself in a steadily-increasing dividend over time. However, increasing earnings is another often-repeated event and leads to track records of consecutive earnings increase. Even though consecutive earnings increases are not a stated corporate goal, there is evidence that firms displaying this pattern attract market premiums, and that these premiums differ according to the prior earnings record. For example, Barth et al. (1999) find that firms with a pattern of at least five years of consecutive annual earnings increases trade at significantly higher price-to-earnings multiples than other firms, with the multiple increasing as the earnings record lengthens. For firms with track records of at least five years of consecutive increases in quarterly earnings Myers et al. (2007) report that annual abnormal returns are positive but decrease with each one-year extension of the record. Returns around dividend decrease announcements that break the earnings-increase sequence are more negative for longer records, encouraging managers to use accounting strategies to convert a potential earnings decrease into an increase to maintain the pattern. The same incentive may also prompt managers to guide analysts' forecasts in order to sustain strings of positive earnings surprise announcements. Kasznik and McNichols (2002), Bartov et al. (2002) and Xie (2011) find that returns around earnings announcements are related to the number of times that a firm has equalled or exceeded analysts' consensus earnings expectations in the past. Our study of returns around each dividend increase within a sequence of dividend increases is a logical extension of these prior studies.

In contrast to the U.S. where dividends are set and paid quarterly, Australian firms announce their financial results and set and pay dividends semi-annually. Unlike the U.S.,

where dividends and earnings may or may not be announced concurrently, Australian firms always announce their dividend and earnings figures simultaneously, making it difficult to disentangle the stock market's reaction to the dividend announcement from its reaction to the earnings number. To isolate the return component that is attributable to the dividend increase we build on the model of Kane et al. (1984) and decompose abnormal returns into the part related to unexpected earnings, the part due to unexpected dividends, and the part due to an interaction term that depends on the sign of the unexpected earnings and the sign of the unexpected dividend. Abnormal returns are highest when unexpected earnings and unexpected dividends are both positive, suggesting that earnings and dividend announcements that corroborate each other contain more information than announcements that do not. Slightly different versions of this model are estimated by Easton (1991) using Australian data and Cheng and Leung (2006) using Hong Kong data. Both studies find evidence that the magnitude of abnormal returns is related to the signs of the unexpected earnings and unexpected dividends.

4.4 Sample Construction and Empirical Methodology

4.4.1 Sample Construction

All dividends paid by ordinary shares that are listed on the Australian Securities Exchange (ASX) between 1 January 1987 and 31 December 2013 are identified using the Integrated Real Time Equity System (IRESS) database.[32] Although our study analyses abnormal returns around dividend increases announced during 1994 to 2013, we go back as far as 1987 when calculating the number of years of consecutive dividend increases.[33] In contrast to the

[32] We consider ordinary dividends only and ignore special dividends.
[33] For example, if a firm that paid a dividend in 1986 and had no dividend increase in 1987 announces a dividend increase in each year from 1988 through 1994, we would include the 1994 dividend increase as the

quarterly dividend payment cycle in the US, Australian firms typically pay two ordinary dividends each year. The interim dividend is typically announced at the same time as the firm's earnings for the first half (i.e., six months) of the fiscal year, and the final dividend is announced at the same time as the firm's earnings for the full twelve-month fiscal year. We investigate returns around the announcement of increases in the final dividend because of the richer information environment around the time Australian firms announce their full-year (Balachandran et al., 2012).

4.4.2 Identifying Dividend Increases

For each dividend-paying firm, all dividends paid between 1987 and 2013 are examined to identify instances where the following three conditions hold:

1. The dividend is not an initiation.
2. The total ordinary dividends paid in a fiscal year are strictly greater than the total ordinary dividends in the immediately preceding fiscal year.
3. The final ordinary dividend in a fiscal year is strictly greater than the final ordinary dividend in the immediately preceding fiscal year.[34]

The second and third conditions can be written respectively as:

$$TD_t > TD_{t-1} \quad (4.1)$$

and

$$FD_t > FD_{t-1} \quad (4.2)$$

seventh consecutive dividend increase. If this firm increased its dividend again in 1995, we would also include it as an eighth consecutive dividend increase.

[34] Our final sample of 1,350 dividend increases contains 31 instances of an interim dividend decrease, but the increase in the final dividend results in a higher total annual dividend. We leave these events in the sample to investigate if the conflicting information conveyed by a lower interim dividend and a higher final dividend is different to the information conveyed by an increase in both the interim and final dividend. Our results are not sensitive to the removal of these 31 observations from the sample.

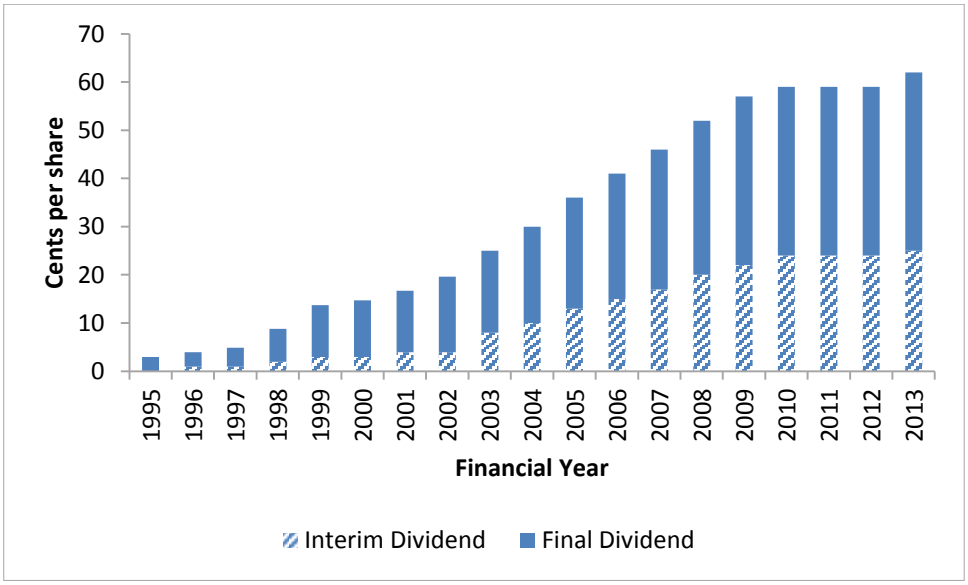
where TD_t is total ordinary dividends for fiscal year t and is defined as $TD_t = ID_t + FD_t$, TD_{t-1} is total ordinary dividends for fiscal year $t-1$ and is defined as $TD_{t-1} = ID_{t-1} + FD_{t-1}$, ID_t is the interim ordinary dividend for fiscal year t, FD_t is the final regular dividend for fiscal year t, TD_{t-1} is the interim ordinary dividend for fiscal year $t-1$, and FD_{t-1} is the final ordinary dividend for fiscal year $t-1$.

4.4.3 Counting the Number of Consecutive Dividend Increases

The process of counting the number of consecutive increases for each dividend increase event in the initial sample proceeds as follows. Define $t-1$ as the first year in a firm's dividend history that contains an interim and a final dividend. If the dividend in year t is identified as an increase, then the dividend increase "counter" attached to year t is set to '1'. If the dividend in year $t+1$ is again identified as an increase, then this represents the second consecutive increase and in this case the counter attached to year $t+1$ is set to '2'. The process of identifying consecutive increases and incrementing the dividend increase counter continues until a year does not contain an increase. A firm can drop out of the sample and then potentially re-enter the dividend increase sample in a later year if the firm again begins increasing its dividends. Therefore, the same firm can have multiple dividend- increase track records of varying lengths.

Figure 4.1
Sonic Healthcare Limited Dividend History

The figure displays the interim and the final dividend for Sonic Healthcare Limited (ASX Code: SHL) for each fiscal year from 1995 to 2013. The total annual dividend for a fiscal year is the sum of the interim dividend and the final dividend.



To demonstrate the dividend counting technique, Figure 4.1 depicts the dividend history for Sonic Healthcare Limited (Sonic). The figure shows that Sonic has two dividend-increase track records. The first consists of a thirteen-year track record with the first increase occurring in the fiscal year ended 1997, the second in 1998, and the track record continues to increase by one each year until the thirteenth increase in 2009.[35] The second record starts in 2012 and ends in 2013. The record may continue in 2014 but the sample collection period ends in 2013.

The initial sample consists of 2,638 dividend increases occurring between 1994 and 2013. Table 4.1 presents the distribution of the initial sample by consecutive dividend increase number and announcement year. The table shows that 1,034 dividend increases, or

[35] The company did not pay an interim dividend in 1995, but a final dividend only. To qualify as a dividend increase equation 4.1 requires that the dividend across each of two consecutive years must consist of both an interim and a final dividend. Therefore, the first annual dividend increase occurs in 1997 because the interim plus the final dividend is higher than the interim plus the final dividend paid in 1996.

Table 4.1
Number of Dividend Increase Announcements by Announcement Year for Initial Sample

The table reports the distribution for a sample of 2,638 dividend increases announced between 1994 and 2013 classified by announcement year and the position of the dividend increase in the dividend-increase track record, *i*. For example, in the year 2005, there are a total of 189 dividend increase announcements. Of these 189 dividend increase announcements, 60 are first-time dividend increases , 37 represent a second consecutive increase, 26 are the third consecutive dividend increase, and so on.

i	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	TOTAL
1	39	29	27	48	41	39	55	28	71	57	61	60	69	76	48	25	92	55	49	65	1,034
2	19	31	15	15	24	22	20	16	16	51	42	37	38	40	31	13	10	48	26	19	533
3	14	11	19	9	9	11	15	13	10	10	42	26	29	25	20	7	8	7	31	19	335
4	3	11	7	12	7	6	7	10	10	8	9	37	22	24	12	6	4	6	6	17	224
5	2	2	8	5	9	6	5	4	7	8	8	7	31	18	17	6	6	3	4	5	161
6	1	2	1	6	5	7	5	3	4	6	6	7	6	28	9	4	2	4	1	2	109
7	2	1	2	1	5	4	5	4	2	4	4	5	5	4	20	3	4	2	4	0	81
8	0	1	1	2	1	4	3	4	3	1	4	3	4	4	2	6	2	1	2	2	50
9	0	0	1	1	1	1	3	2	3	2	1	2	3	4	2	1	5	1	0	2	35
10+	0	0	0	0	1	2	2	1	2	5	4	5	7	10	9	4	4	7	8	5	76
TOTAL	80	88	81	99	103	102	120	85	128	152	181	189	214	233	170	75	137	134	131	136	2,638

40%, of the initial sample of 2,638 dividend increases are first-time increases. From this sample of 1,034 first-time increases, 533, or 53%, increase the yearly dividend in the following year. About 63% of the firms (335 out of 533) that increased the dividend a second time go on to increase the dividend a third time in the following year. For each consecutive increase from the third to the ninth the proportion of firms that progress to the following dividend-increase-number category is remarkably stable at approximately 70%. After ten consecutive annual dividend increases the proportions become more volatile due to the small sample size in each dividend-increase number category and therefore we combine track records of ten or more consecutive dividend increases into a single category labelled as '10+'.[36] The finding that the proportion of firms extending the dividend track record increase is interesting in and of itself because it shows that once a firm begins increasing its dividend it becomes highly likely that subsequent increases will follow.

4.4.4 Variable Definitions and Descriptive Statistics

For our descriptive analysis and multivariate analysis of the returns around dividend increases, we employ a number of different variables that are motivated by prior studies. First, the magnitude of the dividend increase, *CHG*, is calculated as:

$$CHG = \frac{FD_0 - FD_{-1}}{P} \tag{4.3}$$

where FD_0 is the (increased) final dividend for year 0 (the recently ended fiscal year), FD_{-1} is the final dividend for the prior fiscal year, and P is the stock price five days before the announcement. Equation (4.3) can be interpreted as the change in the half-yearly dividend

[36] Twenty-four firms announce a tenth consecutive increase, and the number of firms in each track record length category decreases until the maximum of sixteen that is maintained by one firm.

yield. The dollar change in the final dividend appears in the numerator of equation (4.3) rather than the dollar change in the annual dividend, *TD*, to be consistent with existing work (e.g., Yoon and Starks, 1995; Li and Lie, 2006).[37]

Our central hypothesis is that the market reaction to a dividend increase may differ depending on the number of prior consecutive dividend increases. A finding of abnormal return differences is consistent with at least two explanations. First, abnormal return differences may be caused by systematic differences in firm characteristics across each dividend-increase-number category. For example, there is evidence that larger dividend increases are associated with larger positive abnormal returns (Aharony and Swary, 1980, Dielman and Oppenheimer, 1984). As another example, firms are likely to increase their dividends when their profitability increases. To address the concern that other factors that are correlated with the number of dividend increases may explain the relationship between the number of dividend increases and abnormal returns, we control for firm characteristics that may be associated with dividend increases. Second, the market may more accurately forecast the size of future dividends once the firm has developed a reputation for regular dividend increases. In this case, because the actual dividend increase is at least partially anticipated, abnormal returns may tend to decrease with dividend increase repetition.

Existing studies document a positive relationship between abnormal returns around dividend change announcements and the magnitude of the change in the dividend. However, a more appropriate measure of the dividend change is the magnitude of the unexpected dividend. We follow Brown et al. (2008) and calculate the dividend forecast error, or the dividend surprise, as the difference between the actual dividend and the forecasted dividend scaled by the stock price five days before the dividend announcement. Forecasted and actual

[37] We also express equation (5.3) as a percentage change by replacing P with FD_{-1} (yielding a measure similar to that in Grullon et al., 2002) and our results are not sensitive to this change of variable in the denominator.

dividend-per-share figures (denominated in Australian dollars) are obtained from the Institutional Brokers' Estimate System (IBES) database. For consistency, we use the same year-label notation as Conroy et al. (2000) and define year 0 as the just-completed fiscal year, and year 1 as the current fiscal year. The dividend forecast error is calculated as:

$$DS_0 = \frac{D_0 - FD_0}{P} \tag{4.4}$$

where DS_0 is the dividend surprise measure for the year 0, D_0 is the actual dividend per share for year 0, FD_0 is the latest median dividend per share forecast for year 0 that was published before the announcement date, and P is the stock price five days before the announcement date.

A listing requirement (Rule 4.3A) of the Australian Securities Exchange (ASX) is that firms must supply a preliminary final report (known as an Appendix 4E). This report contains the firm's financial statements for the fiscal year and includes key financial information such as the profit (or loss) and dividend per share. In addition to the public release of the Appendix 4E, firms also release an accompanying document that summarises the information in the Appendix 4E in a less formal style. This document may also contain an 'outlook' that provides quantitative earnings guidance for the current fiscal year. Information disclosed in the 'outlook' may lead analysts to revise earnings-per-share forecasts for the current year and potentially lead to stock price changes.[38] To properly control for the information conveyed by each announcement, we employ two earnings-related measures. The first measures the magnitude of the earnings surprise for the fiscal year just ended (year 0), and the second

[38] As an example, on 22 August 2013, Codan Limited announced earnings per share for the 2013 fiscal year of \$0.258, close to the most recent median analysts' forecast of \$0.259 prior to the announcement. The concurrently announced dividend of \$0.13 was considerably higher than the median analysts' forecast of \$0.11 per share. However, by the close of trading the stock price fell 22%. The stock price decline was most likely due to the stated lower profit outlook for the 2014 fiscal year rather than the increased dividend. Consistent with this explanation, analysts lowered their median 2014 earnings per share estimate from \$0.224 to \$0.154.

measures the change in forecast earnings for the current fiscal year (year 1). We again follow Brown et al. (2008) and calculate the earnings surprise as:

$$ES_0 = \frac{E_0 - FE_0}{P} \tag{4.5}$$

where ES_0 is the earnings surprise for year 0, E_0 is the actual earnings per share for year 0, FE_0 is the latest earnings per share forecast for year 0 published prior to the actual earnings announcement, and P is the stock price five days before the announcement date. Actual earnings, E_0, and forecasted earnings, FE_0, are measured using earnings per share figures from the IBES database.

The change in earnings forecast for the current fiscal year, year 1, is calculated as:

$$\Delta EF_1 = \frac{FE_1^{+} - FE_1^{-}}{P} \tag{4.6}$$

where ΔEF_1 is the change in the earnings forecast for year 1, FE_1^{+} is the first available earnings per share forecast for year 1 that is published after the actual earnings announcement, and FE_1^{-} is the last available earnings per share forecast for year 1 that is published before the actual earnings announcement. Forecasted earnings are obtained from the IBES database. We assume that changes in analysts' earnings for the current fiscal year that are made as a consequence of any current-year guidance are impounded in the stock price on the announcement date, or the following day.

We use two variables to measure firm characteristics, based on evidence in Yoon and Starks (1995) that announcement-period returns are related to firm size and market-to-book ratio. We use the value of the market-to-book ratio measured on a continuous scale, rather than forming two groups based on whether the ratio is greater than one or less than one as in

Yoon and Starks. The market-to-book ratio and the market value of equity are measured five days before the announcement date, and are obtained from the Datastream database.

To remain in the final sample each dividend announcement in the initial sample must satisfy the following five conditions:

(1) Actual earnings per share data and forecasted earnings per share data for the past fiscal year, as well as forecasted earnings per share for the current fiscal year, are available in the IBES database.

(2) Actual dividends per share data and forecasted dividends per share data for the past fiscal year are available in the IBES database.

(3) The market value and market-to-book ratio of the firm is available in the Datastream database.

(4) Stock price data is available in the IRESS database.

(5) No other price-sensitive announcement occurs within a three trading day window centred on the dividend increase announcement date.

Table 4.2
Number of Dividend Increase Announcements by Announcement Year for Final Sample

The table presents the distribution of the final sample of 1,350 dividend increases announced by ASX-listed firms between 1994 and 2013 partitioned by the year of the announcement and the consecutively-numbered dividend increase, *i*, in a track record of consecutive annual dividend increases.

i	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	TOTAL
1	11	8	8	13	17	15	28	15	41	29	24	24	29	39	19	15	54	20	25	33	467
2	10	13	7	4	11	9	9	10	7	31	25	15	11	20	20	7	7	26	14	13	269
3	6	6	9	7	3	5	8	7	6	3	26	17	8	11	14	6	3	6	20	9	180
4	1	7	4	5	6	3	2	5	6	3	2	23	14	8	5	5	3	3	6	10	121
5	0	2	2	3	5	5	3	2	6	5	4	2	19	14	9	4	5	1	0	3	94
6	0	0	0	3	4	3	4	2	3	3	4	4	1	15	6	3	2	3	0	2	62
7	1	0	0	1	1	3	3	3	2	3	3	1	4	1	10	3	3	1	3	0	46
8	0	1	1	0	1	1	3	4	2	1	2	2	2	3	1	3	2	1	2	2	34
9	0	0	1	1	0	1	2	2	3	1	1	0	3	4	0	0	3	1	0	2	25
10+	0	0	0	0	1	1	1	0	2	4	3	4	5	4	9	2	1	5	7	3	52
TOTAL	29	37	32	37	49	46	63	50	78	83	94	92	96	119	93	48	83	67	77	77	1,350

The final sample consists of 1,350 dividend increase announcements made by 339 unique firms. The distribution of announcements partitioned by calendar year and the number of consecutive increases is reported in Table 4.2. The final sample size represents a reduction of approximately fifty percent in the initial sample size of 2,638. The proportion of announcements that qualify for the final sample generally increases with the number of consecutive dividend increases. For example, 45% of the first-time dividend increases, about 50%-60% of the second through to the seventh consecutive increases, and about 70% of the ninth and tenth consecutively-numbered dividend increases are retained in the final sample.[39] As in Table 4.1, the largest number of dividend increases occurs in the years 2003-2007.[40] Nevertheless, the distribution is fairly well spread out across years and even the longer track records tend to be distributed across years.

Table 4.3 reports descriptive statistics for the 1,350 increases that form the final sample, classified by consecutive dividend-increase number. The overall mean and median increase in the dividend yield is 0.51% (0.34%). The first dividend increase is the largest and the size of the median change decreases with each successive annual dividend increase until the sixth increase. The magnitude of the change then remains at approximately 0.25% for each remaining increase in the track record.

[39] The careful reader may notice that there are 15 observations that represent 11 consecutive annual dividend increases but only 14 observations in the 10 dividend increases category. This is simply an artefact of the final sample construction method. As would be expected for the initial sample, the number of observations in each dividend increase number category is never larger than the number of observations in the immediately preceding dividend increase number category.

[40] This period coincides with market returns (proxied by the All Ordinaries Accumulation Index) of at least 15% per annum.

Table 4.3
Descriptive Statistics

The table contains firm-specific descriptive statistics for variables used in the analysis partitioned by dividend increase number for the final sample of 1,350 annual dividend increases announced by Australian firms between 1994 and 2013. Track records of ten or more consecutive annual dividend increases are combined in a single category labelled '10+'. Dividend Change is the difference in the final dividend scaled by the stock price, Earnings Surprise for the past fiscal year is the difference between the actual earnings-per-share figure and the most recent EPS forecast prior to the dividend change announcement scaled by the stock price five days before the announcement date, Dividend Surprise is calculated as the actual dividend per share minus the last dividend per share forecast scaled by the stock price, Δ Earnings Forecast is the change in earnings per share forecast calculated as the difference between the first earnings per share forecast for the current fiscal year published after the announcement date and the last earnings per share forecast for the current fiscal year published before the announcement date scaled by the stock price, Market-to-Book and Market Value are the price-to-book value, PTBV, and market value of equity, MV, respectively, from the Datastream database.

		Dividend Change		Earnings Surprise		Dividend Surprise		Δ Earnings Forecast		Market-to-Book		Market Value	
Consecutively-Numbered Dividend Increase	*n*	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
1	467	0.71%	0.45%	0.34%	0.11%	0.21%	0.12%	-0.12%	0.00%	2.52	1.88	1,979	373
2	269	0.51%	0.39%	-0.20%	0.07%	0.08%	0.11%	-0.04%	0.00%	2.69	1.93	3,045	435
3	180	0.47%	0.30%	0.10%	0.06%	0.15%	0.07%	-0.03%	0.00%	3.19	2.19	4,043	572
4	121	0.35%	0.28%	0.33%	0.04%	0.07%	0.05%	-0.01%	0.00%	3.55	2.43	4,832	722
5	94	0.36%	0.27%	-0.08%	0.04%	0.12%	0.04%	-0.09%	0.00%	3.58	2.62	3,047	828
6	62	0.29%	0.21%	-0.05%	0.05%	0.13%	0.07%	-0.08%	0.00%	3.37	2.71	4,169	1,285
7	46	0.34%	0.29%	0.01%	0.00%	0.06%	0.03%	-0.03%	0.02%	3.44	3.23	4,569	1,587
8	34	0.26%	0.23%	0.16%	0.09%	0.07%	0.05%	0.01%	0.00%	3.37	2.54	6,384	1,616
9	25	0.24%	0.25%	0.09%	0.14%	0.09%	0.06%	0.05%	0.00%	3.01	2.33	9,408	2,210
10+	52	0.29%	0.21%	-0.11%	0.01%	0.04%	0.03%	0.00%	0.00%	3.35	2.80	21,448	8,855
All	1,350	0.51%	0.34%	0.11%	0.07%	0.14%	0.08%	-0.07%	0.00%	2.94	2.17	3,984	598

The mean (median) earnings surprise for the final sample is 0.11% (0.07%).[41] The mean (median) dividend surprise, which measures the accuracy of analysts' dividend-per-share forecasts, is 0.14% (0.08%), and indicates that analysts' forecasts are slightly underestimating dividend amounts for our sample of firms. There is some evidence that the accuracy of analysts' earnings and dividend forecasts improves as the dividend track record gets longer at least over the first five dividend-increase-number categories. However, the median earnings surprise actually rises sharply for dividend-increase categories 8 and 9, which weakens any inference. Earnings and dividend forecasts exhibit remarkable accuracy for firms with a record of ten or more dividend increases, with a median earnings surprise of just 0.01% and a median dividend surprise of 0.03%.

Little new information regarding earnings prospects for year 1 is disclosed around the announcement of year 0's earnings and dividend. The median difference between the year 1 earnings forecast before and after the announcement is 0.00% for the full sample. In fact, the median is 0.00% across all but the seventh dividend-increase-number category. However, it is interesting to note that the mean change in earnings forecasts is negative for firms with short dividend-increase track records and positive for long dividend-increase track records.[42]

The overall mean (median) market-to-book ratio is 2.94 (2.17) indicating that the median firm is valued at approximately twice its book value. The distribution is right-skewed which is unsurprising given that the ratio is truncated at 0 and some firms will have very high market-to-book ratios. The median market-to-book ratio increases monotonically from 1.88 for the first dividend increase to 3.23 for the seventh consecutive increase, suggesting a

[41] See Degeorge et al. (1999) for an analysis of the strategies that managers use to manipulate earnings to achieve particular objectives, such as beating analysts' forecasts.

[42] Not all firms provide an earnings forecast for year 1 at the same time they announce the earnings and dividend for year 0. In this case analysts are unlikely to change their year 1 earnings forecast compared to their pre-announcement forecast, and therefore the median change of 0% is not unexpected. Nevertheless, for those firms that do provide earnings guidance for year 1, the corresponding change can be substantial, as we demonstrate in our results.

positive correlation between market-to-book and the length of the dividend-increase track record. The mean (median) market value of equity (MVE) is 3.9 billion Australian dollars ($600 million).[43] Both the mean and median values are increasing with the dividend-increase track record length. At the time of the first dividend increase, the mean (median) market value is nearly $2.0 billion ($373 million) and the measures increase monotonically with each subsequent dividend increase until the tenth or higher increase at which time the value has increased substantially to $21.4 billion ($8.9 billion). In an investigation of strings of consecutive non-decreasing quarterly earnings, Myers et al. (2007) report that total assets at the end of the earnings string exceed three times the level of total assets at the start of the string. In light of this evidence, the positive relationship between firm size and the length of the dividend increase string is less surprising and seems consistent with the idea that successful firms have higher market values and are also able to maintain a track record of consistent dividend increases over long periods of time.

Kane et al. (1984) show abnormal returns around joint dividend and earnings announcements are significantly related to the sign of both the earnings and the dividend surprise. Our multivariate model also incorporates a set of dummy variables whose value depends on the sign of the earnings surprise and the dividend surprise for year 0. Since earnings and dividend surprises may be either positive, negative, or zero, there are nine possible combinations of $D(a, b)$, where a is the sign of the earnings surprise and b is the sign of the dividend surprise. The distribution of sample observations across these nine categories is reported in Table 3.4. Consistent with the positive median earnings surprise observed for the final sample reported in Table 3.4, positive surprises are more frequent than negative surprises. The three positive earnings surprise groups, $D(+, -)$, $D(+, 0)$ and $D(+, +)$, represent approximately 59% of sample announcements while the negative earnings surprise cases, $D(-$

[43] Throughout this particular essay all dollar amounts are denominated in Australian dollars.

, -), *D*(-, 0) and *D*(-, +), comprise 38% of the sample. In terms of the sign of the dividend surprise, the positive surprise cases, *D*(-, +), *D*(0, +) and *D*(+, +) comprise 62% of sample announcements compared to a much lower 23% for negative dividend surprises. The much larger difference in proportions of positive and negative surprises for earnings is because, while a substantial 15% of dividend announcements are perfectly forecast, only 3% of earnings announcements contain no surprise. In terms of joint signs, the most common earnings-and-dividend surprise combination is *D*(+, +), which means that both the earnings and dividend surprise are positive, with 41% of the sample announcements falling into this category. At the opposite extreme, announcements of a negative earnings surprise combined with a negative dividend surprise, *D(-, -)*, are fairly infrequent occurring in 9% of the sample.[44] The second and third most common sign pairings are the mixed pairs, *D(-, +)* and *D(+, -,)* which occur in 20% and 11% of the observations, respectively.

Table 4.4
Frequency of Earnings and Dividend Surprise by Sign Pair

The table lists the number and percentage of observations in each category *D(a, b),* where *a* is the sign of the earnings surprise, ES_0, and *b* is the sign of the dividend surprise, DS_0.

Earnings and Dividend Surprise Pair	*n*	Proportion (%)
D(-, -)	154	11.4
D(-, 0)	87	6.4
D(-, +)	270	20.0
D(0, -)	4	0.3
D(0, 0)	11	0.8
D(0, +)	25	1.9
D(+, -)	153	11.3
D(+, 0)	99	7.3
D(+, +)	547	40.5
Total	1,350	100

[44] This figure is also roughly similar to the proportion of negative earnings paired with negative dividend surprises of 14% and 7% reported for Hong Kong in Cheng and Leung (2006) and for Australia in Easton (1991), respectively.

4.4.5 Empirical Methodology

The event study methodology of Brown and Warner (1980, 1985) is used to measure abnormal returns around dividend increase announcements. Day 0 is defined as the date that the earnings and dividend are jointly announced. Announcement dates are collected from the Securities Industry Research Centre of Asia-Pacific (SIRCA) database and cross-checked with three sources depending on the year of announcement. Announcements made before 1994 are confirmed with SIRCA's Signal G database, announcements made between 1995 and 1997 are verified using IRESS, and dates after 1998 are verified using information from the Company Announcements section of the Australian Securities Exchange (ASX) website. Using the SIRCA-reported announcement dates we check company announcements reported by the ASX to determine if any other price-sensitive announcements occur around the time of the earnings/dividend announcement. Abnormal returns are estimated using the following equation:

$$AR_{it} = R_{it} - (\alpha_i - \beta_i R_{mt}) \tag{4.7}$$

where AR_{it} is the abnormal return for stock i for day t, R_{it} is the raw return for stock i for day t, R_{mt} is the return on the ASX300 Accumulation Index for day t, and α_i and β_i are the estimates of the intercept and slope, respectively, for firm i from a market model regression estimated using 200 daily returns calculated using the interval from 264 days before the announcement to ten days before the announcement.[45] Daily stock price and market index data is collected from the IRESS database.

The ASX's standard trading hours are business days from 10am to 4pm. If an announcement occurs after 4pm on day 0, any stock price reaction to an information release

[45] As a robustness check, all of our results are virtually identical if we ignore systematic risk and instead use a simple market-adjusted returns model (i.e., assuming $\alpha_i = 0$ and $\beta_i = 1$ in equation (4.7)). The near-identical results for both abnormal return measures suggests that the model proposed by Anderson (2009) to deal with the thin-trading problem in the New Zealand market is not necessary in our study.

would not occur until the following trading day, day +1. Therefore, to capture the stock price reaction to announcements that are made when the ASX is closed for trading, abnormal returns are measured over a two-day interval from day 0 to day +1.[46] The two-day abnormal return for firm *i*, $CAR_i(0, +1)$ is calculated as follows:

$$CAR_i(0, +1) = AR_{i0} + AR_{i1} \quad (4.8)$$

The correlation coefficient between each firm characteristic variable pair for the full sample of 1,350 dividend increases is reported in Table 4.5. The highest correlation of 0.58 occurs between the independent variables Earnings Surprise and Dividend Surprise. We also include the numbered dividend-increase variable, Dividend-Increase #, and find that this variable is negatively correlated (-0.08) with abnormal returns lending prima facie support to our hypothesis that abnormal returns decline with each subsequent dividend increase in a track record of increases. Consistent with our descriptive statistics in Table 4.3, we also find that the consecutively-numbered dividend increase is negatively correlated with the Dividend Change and positively correlated with Market Value, suggesting that these are important control variables.

Table 4.5
Correlation Matrix

The table reports the Pearson correlation coefficient for each variable pair for a sample of 1,350 dividend increase announcements.

	Abnormal Return	Dividend Change	Earning Surprise	Dividend Surprise	Δ Earnings Forecast	Market-to-Book	Market Value	Dividend-Increase #
Abnormal Return	1							
Dividend Change	0.192	1						
Earnings Surprise	0.020	0.051	1					
Dividend Surprise	0.075	0.249	0.576	1				
Δ Earnings Forecast	0.034	0.002	0.171	0.449	1			
Market-to-Book	-0.067	-0.114	-0.006	-0.022	0.015	1		
Market Value	-0.201	-0.269	-0.003	-0.026	0.005	0.121	1	
Dividend-Increase #	-0.079	-0.239	-0.025	-0.048	0.013	0.111	0.383	1

[46] Conroy et al. (2000) also measure abnormal returns over a two-day event window.

4.5 Regression Model and Estimation Results

4.5.1 Multivariate Model

Our model expands on prior studies of contemporaneous earnings and dividend announcements (Kane et al., 1984; Leftwich and Zmijewski, 1984; Easton, 1991) by including a variable to capture the information in the announcement that pertains to the current year's earnings (Conroy et al., 2000). A further difference between our model and existing studies is that we incorporate firm-specific variables based on evidence in Yoon and Starks (1995) and Lang and Litzenberger (1989) that abnormal returns around dividend increase announcements are significantly related to the market-to-book ratio. The evidence in Table 3 that firm size and the dividend change are related to the length of the dividend-increase track record motivates us to also include these two variables in the model. Our final, key, variable of interest is the consecutively-numbered dividend increase. The complete multivariate model, suppressing the subscript *i* for each observation, is:

$$\begin{aligned} CAR(0,+1) = {} & \alpha_0 + \alpha_1 CHG + \alpha_2 ES_0 + \alpha_3 DS_0 + \alpha_4 \Delta EF_1 + \alpha_5 MBR + \alpha_6 \ln MVE \\ & + \alpha_7 D(-,0) + \alpha_8 D(-,+) + \alpha_9 D(0,-) + \alpha_{10} D(0,0) \\ & + \alpha_{11} D(0,+) + \alpha_{12} D(+,-) + \alpha_{13} D(+,0) + \alpha_{14} D(+,+) \\ & + \sum_{j=1, j\neq 7}^{10+} \delta_j DINUM_j \end{aligned} \qquad (4.9)$$

where *CAR(0, +1)* is the two-day announcement period cumulative abnormal return, *CHG* is the change in the final dividend as defined in equation (4.3), ES_0 is the earnings surprise for year 0 in equation (4.5), DS_0 is the dividend surprise defined in equation (4.4), ΔEF_1 is the change in earnings per share forecast for year 1, as defined in equation (4.6), *MBR* is the dividend-increasing firm's market-to-book ratio, *lnMVE* is the natural logarithm of the market value of equity of the, *D(a, b)* is a collection of eight dummy variables which depend on *a,* the sign of the earnings surprise, and *b,* the sign of the dividend surprise, and $DINUM_j$ is

a dummy variable that represents the number of consecutive annual dividend increases. $DINUM_j$ equals one if the dividend increase is the j^{th} increase in a track record of consecutive dividend increases, and zero otherwise. *D(-,-) and* $DINUM_7$ are excluded from equation (4.9) to prevent the perfect multicollinearity among the earnings-surprise/dividend-surprise dummy variables and the number-of-dividend-increases dummy variables that would occur otherwise.

Dividend increase announcements are not spread evenly throughout the year, but clustered in the month of August, as shown in Table 4.6. The clustering is because 972, or 72%, of sample firms have a fiscal year that ends on June 30th.[47] Announcements occur, on average 55 days, after the fiscal year-end for the full sample, and so it is not surprising that 76% of all increases are announced in August and September. The third most popular announcement month, with 7% of the total observations, is February which is when most firms with a December 31st fiscal year-end announce the increase.

Table 4.6
Distribution of Dividend Increase Announcements by Month

The table reports the distribution of the 1,350 dividend increase announcements in the final sample by announcement month.

Month	*n*	Proportion (%)
January	3	0.2
February	94	7.0
March	38	2.8
April	6	0.4
May	31	2.3
June	7	0.5
July	31	2.3
August	875	64.8
September	154	11.4
October	43	3.2
November	66	4.9
December	2	0.1
Total	1,350	100

[47] This proportion compares with 83% for the universe of 1887 companies trading on the Australian Securities Exchange with available data as at the time of writing. The second most popular year-end (12% of firms) is December 31st .

Table 4.7
Distribution of Dates with Multiple Announcements

The table reports the distribution of 1,350 dividend increase announcements by the number of announcements on each unique date.

Number of Announcements	Number of Unique Dates
1	407
2	96
3	66
4	28
5	21
6	18
7	8
8	8
9	2
10	4
11	2
12	0
13	0
14	2
Total	662

As reported in Table 4.7, the 1,350 dividend increase announcements are spread across 662 unique calendar dates. Of these 662 dates, 407 dates, or 61%, have a single dividend increase announcement while 255 dates (39%) experience two or more announcements. At the extreme, two dates contain 14 dividend increase announcements. Because some days have multiple announcements, abnormal returns on such days may not be independent. Consequently, the standard errors of the coefficient estimates in equation (4.9) may be understated, and as a result the *t*-statistics may be overstated relative to the case where the abnormal returns are independent. To control for this possibility, we use the same method as in Conroy et al. (2000) and control for the potential dependency in returns on dates with multiple announcements by including 254 date-dummy variables in equation (4.9). Each dummy variable takes the value of one if there are two or more announcements on that particular date. Because the same firm can announce more than one increase and appear in the sample multiple times we also include firm fixed-effect dummies to control for any unobserved dependency in abnormal returns across announcements, as suggested by Chemmanur and Tian (2013).

4.5.2 Estimation Results

The results of estimating three variations of equation (4.9) are shown in Table 4.8. Model 1 is a reduced form of equation (4.9) relates abnormal returns around simultaneous earnings and dividend announcements to the magnitude of each surprise, and the sign of the combined surprise. The coefficient on ES_0 is -0.26% and significant. The negative sign is unexpected as it suggests a negative reaction to positive earnings surprises and vice versa. In comparison, Kane et al. (1984) find that the earnings surprise is not significantly related to abnormal returns, while Conroy et al. (2000) report a positive and significant coefficient estimate. The highly significant coefficient estimate of 1% on ΔEF_1 confirms that management's year 1 earnings guidance has a substantial price impact. The three positive earnings surprise dummies, *D(+, -)*, *D(+, 0)* and *D(+, +)*, are each associated with significantly positive abnormal returns. Furthermore, the significance and magnitude of the coefficient increases as the dividend surprise improves, increasing from 1.5% for the *D(+, -)* combination, to 1.7% for the *D(+, 0)* combination, and to 2.2% for the positive earnings and dividend surprise, *D(+, +)*, combination. None of the remaining earnings-dividend surprise dummy pairs are significant, indicating that when the earnings surprise is either negative or zero the announcement date abnormal returns are not significantly different from *D(-, -)* regardless of the sign of the dividend surprise. In summary, our regression results for a traditional form of model (1) are broadly comparable with existing literature.

Table 4.8
Multivariate Regression Results

The table reports the regression coefficients and associated *t*-statistics from estimating three different specifications of equation (4.9) for the final sample of 1,350 dividend increase announcements that occur between 1994 and 2013. The dependent variable is CAR(0, +1), the cumulative risk-adjusted abnormal return for the two-day announcement period. CHG is the change in the final dividend, ES_0 is the earnings surprise, DS_0 is the dividend surprise, ΔEF_1 is the change in earnings per share forecast, MBR is the market-to-book ratio, lnMVE is the natural logarithm of the market value of the firm's equity, D(a, b) is a dummy variables that equals one depending on, *a*, the sign of the earnings surprise and, *b*, the sign of the dividend surprise, and $DINUM_j$ is a dummy variable that equals one if the dividend increase is the *j*th increase in a track record of consecutive annual increases, and zero otherwise. The dummy variable representing the combination of a negative earnings surprise and a negative dividend surprise, D(-,-), and the dummy variable for announcements that represents the seventh consecutive annual dividend increase, $DINUM_7$, are omitted to prevent exact multicollinearity within each group of dummy variables. Each model contains fixed firm and day effects. Adj. R-sq is the value of the Adjusted R-squared statistic. ***, ** and * indicates significance at the 1%, 5% and 10% level, respectively.

	Model 1		Model 2		Model 3	
Variable	Coefficient	*t*-statistic	Coefficient	*t*-statistic	Coefficient	*t*-statistic
Constant	0.124	2.12**	0.091	1.55	0.215	2.58***
CHG					-0.002	-0.49
ES_0	-0.261	-3.19***	-0.269	-3.28***	-0.255	-3.10***
DS_0	0.596	1.73*	0.606	1.76*	0.548	1.57
ΔEF_1	1.001	4.16***	0.970	4.01***	0.945	3.94***
MBR					-0.003	-2.77***
lnMVE					-0.007	-1.97*
D(-, 0)	0.000	0.01	0.001	0.08	0.001	0.14
D(-, +)	0.008	1.26	0.009	1.36	0.007	1.18
D(0, -)	0.035	1.08	0.038	1.19	0.048	1.49
D(0, 0)	0.009	0.47	0.010	0.51	0.009	0.49
D(0, +)	0.015	1.14	0.013	1.02	0.011	0.87
D(+, -)	0.015	2.15**	0.015	2.27**	0.014	2.00**
D(+, 0)	0.017	2.11**	0.017	2.12**	0.016	2.06**
D(+, +)	0.022	3.91***	0.023	3.94***	0.021	3.73***
$DINUM_1$			0.023	2.70***	0.016	1.84*
$DINUM_2$			0.023	2.64***	0.018	2.01**
$DINUM_3$			0.021	2.35**	0.018	1.99**
$DINUM_4$			0.017	1.79*	0.014	1.55
$DINUM_5$			0.018	1.84*	0.017	1.77*
$DINUM_6$			0.007	0.71	0.008	0.75
$DINUM_8$			0.013	1.05	0.013	1.06
$DINUM_9$			0.031	2.34**	0.029	2.26**
$DINUM_{10+}$			0.007	0.61	0.012	1.06
Adj. R-sq	0.224		0.230		0.242	
F-statistic	1.64***		1.66***		1.70***	

Models (2) and (3) incorporate dummy variables that number each dividend increase in the track record allowing us to test the hypothesis of a difference in announcement period abnormal returns based on the prior dividend history. In Model (2), the coefficient estimates on $DINUM_1$ to $DINUM_5$ are positive and significant and the magnitude and significance of the coefficient declines monotonically with each successive dividend increase. This result shows that announcement period abnormal returns vary depending on the position of the dividend increase within the track record. After controlling for the magnitude of the dividend change, firm market-to-book value, and firm size, the results for Model 3 reveal significant abnormal returns are associated with the first three, the fifth and the ninth consecutive increase. The magnitude of the coefficient estimate for each of the first three announcements is remarkably stable at 1.6%, 1.8% and 1.8%, respectively. For the fourth increase, the coefficient estimate is no longer significant. The estimated coefficient of the ninth increase is 2.9% and is substantially larger than all the other increases.[48] The reduction in the statistical significance of returns associated with each consecutive dividend increase announcement is consistent with each subsequent dividend increase announcement conveying less new information. Indeed the increasing accuracy of analysts' dividend forecasts with each subsequent increase in the dividend-increase track record length that we noted earlier strengthens our findings. Including the dividend-number dummies renders the dividend surprise insignificant, suggesting that the addition of the length of the dividend track record to the model explains the dividend surprise effect. Consistent with Lang and Litzenberger (1989), dividend increases by firms with higher market-to-book ratios are associated with

[48] One explanation for the fact that the ninth dividend increase exhibits the highest abnormal return is that on the tenth increase the firm may qualify for inclusion in certain funds that invest only in stocks with ten years of annual dividend increases. Therefore, when a firm announces a ninth consecutive annual dividend increase, the firm achieves a high probability of entering this elite group if it is able to increase the dividend a tenth time. However, to maintain its inclusion in this elite group, the firm must continue to announce annual dividend increases. This argument is consistent with the short-term positive abnormal returns that accrue to firms that qualify for inclusion in broadly-based stock market indices such as the Standard and Poors' 500 as shown by Harris and Gurel (1986).

lower abnormal returns. The magnitude and significance levels of the remaining variables are little changed compared to the corresponding figures in Model 1. Our results indicate that returns are significantly related to earnings information but more importantly that the information content of a dividend increase is affected by the number of dividend increases that have already occurred.

4.6 Conclusion

According to survey evidence, managers place a high priority on maintaining a stable dividend policy and are reluctant to cut dividends. If this is true, then this preference should be manifested through a pattern of slowly increasing dividends over time. This study shows that many Australian firms do indeed have long unbroken track records of consecutive annual dividend increases, suggesting there is substance to managers' claims. Given the existence of these dividend-increase track records, once a firm has built a record of several consecutive dividend increases, it may develop a reputation for further increases. This study examines the hypothesis that the past dividend record is related to the magnitude of abnormal returns around dividend increase announcements. Controlling for earnings-related information, and the size of both the dividend increase and the firm, the results reveal that significant abnormal returns are associated with the first three dividend increases. Our results suggest that the information content of a dividend increase announcement is not the same for all increases but differs based on the number of times a dividend increase has already occurred. The tendency for the abnormal returns to decrease in significance as the number of dividend increases in the track record increases is consistent with the market anticipating subsequent dividend increases. Studies that group all dividend changes together implicitly assume that all increases convey the same information. Consistent with other regularly occurring corporate

announcements, we provide evidence consistent with the market anticipating the information contained in repetitive announcements. The significant abnormal returns around the ninth dividend increase suggest that special information is conveyed when firms approach the milestone of a decade-long history of consecutive annual dividend increases.

Chapter 5

When No-News is Good News: Failing to Increase Dividends

5.1 Introduction

Studies of dividend change announcements consistently report that increases are associated with significantly positive short-term returns and decreases are associated with significantly negative returns.[49] The presence of these returns suggests that dividend changes convey new information to investors, as suggested by Miller and Modigliani (1961). Although dividend change announcements have attracted much research, they are not the most common type of dividend announcement. The most frequently occurring dividend announcement is when the announced dividend is equal to the previous quarter's dividend, resulting in no change to the amount.[50] For example, an analysis of dividends announced in the time period January 1964 through to June 1968 by Pettit (1972) reveals a total of 17,645 announcements of an unchanged dividend, 906 increases and just 29 decreases indicating that 95% of the dividend announcements result in no change to the quarterly dividend amount. Aharony and Swary (1980) and Eades et al. (1985) also report a high proportion of no-change dividend announcements in their samples of 87% and 80%, respectively. Contemporary studies by Baker and Wurgler (2012) and Floyd et al. (2013) reveals that maintaining the dividend at the same level remains the most prevalent type of dividend announcement.

Early studies by Aharony and Swary (1980) and Eades et al. (1985) confirm that significant returns occur around dividend changes, and that returns are not significantly different from zero when the firm announces it will keep the dividend at the same level. The

[49] For example, Aharony and Swary (1980) and Amihud and Li (2006).
[50] We study positive dividends only. We do not consider the case where the announcement of a zero dividend for a particular quarter is preceded by a zero dividend for the previous quarter.

latter result suggests that maintaining the dividend conveys no new information to the market. For this reason no-change dividend announcements have attracted little research, despite their prevalence. The conventional way to calculate the change in a dividend is based on the amounts for two consecutive fiscal quarters. However, the financial managers surveyed by Brav et al. (2005) claim that the most important factor is to maintain a pattern of dividend consistency. Therefore, the market reaction to a dividend announcement may be based not only on the change but also in relation to how the announced amount compares with dividend amounts, and the pattern, over a longer period of time. This distinction is important because if investors identify particular firms that maintain a consistent dividend payment pattern, they may extrapolate the existing dividend-change pattern into the future. Then, if a firm does indeed announce a dividend that continues the prior pattern, as expected, then abnormal returns should be close to zero. On the other hand, an announcement that leads to a break in the historical pattern may convey new information and result in abnormal returns. By a logical extension of this argument, if the pattern has been repeated for many years, then a break in the pattern may have more information content, leading to larger abnormal returns. In this essay we study no-change dividend announcements by comparing two consecutive quarters, but also consider event in conjunction with the track record of all prior dividend payments. Specifically, we identify a sample of no-change dividends that are preceded by patterns of regular dividend increases. Our goal to investigate if the market reaction to the announcement is different based on the number of prior dividend increases.

In contrast to studies of dividend *changes* we investigate dividend *no-changes*. However, we refer to these particular announcements as a "failure-to-increase" to distinguish them from no-change dividend announcements. Our terminology conveys the notion that the sample firms do not increase the dividend as might be anticipated based on the previous history of recurring annual dividend increases. In the same way that Baker and Wurgler

(2012) argue that maintaining the dividend at the same level for consecutive quarters reinforces the amount and builds an expectation that it will continue to be repeated, we argue that repeated instances of a dividend increase builds an expectation of further increases. Furthermore, longer patterns of consecutive dividend increases are more likely to lead to an expectation of the continuation of the record because the firm may develop a reputation for announcing regularly-timed dividend increases. In this case, failing to increase the dividend, when an increase is expected, may have information content.

To investigate this hypothesis we identify a sample of firms that increase the dividend only once and in the same quarter each year, and where all intervening dividends are of the same amount that are at some point followed by a no-change dividend announcement in the same quarter of the following year. We define the chain length as the number of years of prior dividend increases. Our sample of failure-to-increase announcements exhibit statistically significant abnormal returns of 0.33%, or 33 basis points. Unlike past studies, this result suggests that announcements of an unchanged dividend possess information content when the announcement causes a break in a particular dividend pattern. We also find that returns are significantly higher for firms that also announce a reduction in earnings. This result is consistent with DeAngelo et al. (1992) who provide evidence that the information content of dividends differs based on the most recent earnings figure preceding the dividend announcement. Our regression results confirm that abnormal returns are higher the longer is the track record of prior consecutive dividend increases, after controlling for firm characteristics. The reluctance to cut a dividend is motivated by the significantly negative returns that are associated with dividend reductions. Maintaining the dividend following a pattern of increases is a signal that the firm's prospects do not justify an increase, but more importantly do not necessitate a decrease. Our findings are consistent with studies of other

types of corporate events that find the market reaction depends not just on the event itself, but on the length and pattern of the event's prior history.

5.2 Related Literature

The survey of corporate managers by Lintner (1956) reveals that dividends tend to be increased only when managers are confident that the dividend can be maintained at the new higher level. Managers also indicate a reluctance to decrease the dividend. A more extensive survey of dividend-paying firms by Brav et al. (2005) established that the most important factor in the dividend decision is to maintain consistency with the historic dividend policy. These views are consistent with firms' dividend decisions in practice. For example, Bessembinder and Zhang (2014) note that dividend increases tend to persist. Firms that increase the dividend in a particular quarter tend to increase the dividend in the same quarter of the following year.

The significant abnormal returns around dividend change announcements reported in studies such as Aharony and Swary (1980) and more recently by Bessembinder and Zhang (2014) are consistent with dividends having information content (Miller and Modigliani, 1961). Eighty per cent of the 166 managers of dividend-paying firms surveyed by Brav et al. (2005) also agree that the dividend decision conveys information about their firm's future prospects. However, because managers endeavour to maintain a steady dividend policy, a dividend announcement that continues the customary dividend policy may be expected and not have information content. On the other hand, a departure from a prevailing dividend policy may be unexpected and therefore be associated with abnormal returns. Therefore, abnormal returns around dividend decisions may be different depending on the length of the prior dividend track record. Consequently, Dielman and Oppenheimer (1984) reason a

dividend increase to be unexpected when it follows eight consecutive quarterly no-change dividend announcements. Jensen et al. (2010) study dividend cuts announced by firms with a five-year track record of non-decreasing dividends. Furthermore, Dielman and Oppenheimer also study dividend omissions and partition their sample by the number of months since the previous omissions. They report that abnormal returns are more negative the grater the period of time since prior omission. According to Baker and Wurgler (2012) approximately eighty per cent firms with a record of one, two or three consecutive quarterly no-change dividend announcements then announce another unchanged dividend in the next quarter. For firms with a prior record of four unchanged dividends this proportion drops to fifty per cent. That the other fifty per cent of firms change the dividend after four quarters of maintaining the dividend is consistent with many firms evaluating the dividend decision every four quarters, supporting the claim by financial managers in Lintner (1956) that dividends are determined based on annual time periods. Firms that change the dividend after five or more quarters of unchanged dividends exhibit the largest abnormal returns. Building on the intuition that each dividend announcement within a sequence of unchanged dividends mentally reinforces the amount, they suggest that deviating from the historical pattern by announcing a dividend change is an important event in investors' minds and will translate into abnormal returns. Baker and Wurgler use a four-quarter breakpoint based on the observation that their sample of firms changes dividends annually.

We also recognise that dividends are changed annually, but note that firms continue to increase dividends in the same quarter of each fiscal year, for many years. Analysing no-change announcements that interrupt a consistent dividend-increase pattern will reveal if the market reaction to breaks in long dividend-increase patterns are different to shorter patterns. This finding indicates that past dividend behaviour influences the magnitude of market returns around dividend announcements.

Although dividend consistency is a widespread phenomenon, a surprisingly high number of firms maintain earnings consistency, even though it is not a stated corporate objective. For instance, Myers et al. (2007) identify 746 firms with a record of at least twenty consecutive quarters of non-decreasing earnings. They find that these firms earn positive and significant abnormal returns for each year of the pattern. When the pattern is broken by the announcement of an earnings decrease abnormal returns are more negative the longer the pattern length. This result suggests that managers have an incentive to avoid announcing lower earnings. For firms with long earnings patterns, evidence indicates that managers engage in earnings management practices to ensure the pattern continues. In the case of dividends however, consistency is a clearly stated objective (Brav et al., 2005).

Empirical evidence reveals that the market's interpretation of a particular announcement is considered in conjunction with both the earnings and dividend history prior to the announcement. For example, Kane et al. (1984) provides evidence that abnormal returns around earnings and dividend announcements are systemically related to the change in both earnings and dividends, suggesting the market uses both announcements to make inferences about the firm's prospects. Later research shows that returns around dividend announcements are evaluated in relation to the historical dividend and earnings record than compared to the immediately prior quarter, as used in Kane et al. DeAngelo et al. (1992) note that the information content of a dividend cut is greater for firms that also announce a loss but have a prior ten-year history of positive dividend and positive net income. This result is confirmed by Charitou et al. (2011) who study the earnings and dividend announcements of firms with a seven-year history of positive earnings and non-decreasing dividends. When these firms announce a loss and then cut the dividend they display significantly more negative abnormal returns compared to firms with shorter histories. Like us, Charitou et al.

argue that investors place more information content on the dividend announcement when earnings are negative.

Motivated by these studies, we revisit announcements of unchanged dividends to determine if the prior earnings and dividend pattern matters for a special group of firms with a particularly steady pattern of regularly-timed dividend increases. We find that abnormal returns are higher for firms that experience an earnings decrease, and for longer prior dividend patterns. Our results provide further confirmation that even when the dividend is maintained, the market evaluates the dividend announcement in conjunction with the earnings announcement. Based on our empirical evidence, dividend no-changes appear to be, in part, related to past earnings changes.

Our study of breaks in dividend-increase consistency is related to research showing returns are related to the number of prior occurrences of an events including stock splits (Pilotte and Manuel, 1996), seasoned equity offerings (D'Mello et al., 2003), and positive earnings surprises (Kasznik and McNichols, 2002). These studies find that the largest and most significant returns are associated with the first occurrence of the particular event. The market reaction to the event reduces in magnitude and statistical significance as the number of previous instances of the event increases. This pattern suggests that the information content of an announcement differs depending on how often the announcement has already occurred.

5.3 Data

We use the Center for Research in Security Prices (CRSP) database to gather data on all taxable regular quarterly dividends (i.e., dividends with a CRSP Distribution Code of 1232) with a CRSP declaration date (DCLRDT) between January 1962 and December 2010. We

follow Baker and Wurgler (2012) and include only securities with a share code (SHRCD) equal to 10 or 11 (i.e., Ordinary Common Shares).[51] To allow the calculation of the financial characteristics of our sample firms we require that the firm has complete market and accounting data in the CRSP/Compustat Merged database (CCM) for the quarter prior to the failure-to-increase announcement, and for the prior corresponding quarter.

The dividend amount (DIVAMT) is adjusted for corporate events such as stock splits and spin-offs by dividing the dividend amount by the CRSP adjustment factor, FACPR.[52] There is no consensus on the treatment of capitalisation changes in the dividend literature. Some studies calculate a dividend change using split-adjusted dividend amounts (e.g., Dielman and Oppenheimer, 1984; Koch and Sun, 2004) while others exclude a dividend change if a split occurred in a prior period (e.g., Baker and Wurgler, 2012). We examine firms' dividend histories over nearly fifty years and discarding a no-change dividend announcement whenever a split occurs would considerably reduce our sample size. As our results indicate, firms with long dividend histories experience consistent increases in equity market value each year the dividend is raised. The increasing value increases the likelihood that the firm will undertake a stock split to ensure the stock price remains in a particular trading range (Ikenberry et al., 1996). Using dividend amounts adjusted for corporate actions such as splits ensures that firms that split their stock at some point during the track record appropriately remain in our sample. As we report later in this essay, nearly our entire sample of failure-to-increase announcements with a prior dividend history of ten or more years split their stock at least once.

[51] This criterion eliminates securities such as Shares of Beneficial Interest, Units and Real Estate Investment Trusts, among others.

[52] For example, FFY Financial Corp declared a $0.225 dividend and a 2-for-1 stock split on 20 January 1999 and a dividend in the following quarter of $0.1125 (on a post-split basis). Therefore, the dividend is maintained when measured on a split-adjusted basis.

Although we examine abnormal returns around the announcement of unchanged dividends from January 1999 to December 2010, calculating the chain length (i.e., the number of years of consecutive dividend increases) requires analysing the firm's entire previous dividend history. For example, Sara Lee Corporation increases its quarterly dividend once in 1976 and then continues to increase the quarterly dividend exactly once, and in the first quarter of each year, for 28 consecutive years until 2005 when the dividend is unchanged, and the chain terminates.

5.4 Identifying a Failure-to-Increase Event

The construction of the fail-to-increase sample consists of identifying instances where, for a firm paying regular quarterly dividends, a particular year contains a single dividend increase and the following year contains a dividend change of zero percent. We define the chain length to be the number of consecutive years a firm displays this particular dividend-increase pattern. For each firm, year *t* is defined as the declaration year of the first dividend increase.[53] If all three of the following conditions hold:

(i) Year *t+1* contains a single dividend increase, and

(ii) The dividend increase in year *t+1* is declared in the same quarter as the declaration date (DCLRDT) of the dividend increase in year *t*, and

(iii) The amount of each of the dividends between the dividend increase in year *t* and the dividend preceding the dividend increase in year *t+1*, inclusive, are all equal,

[53] The first dividend increase is an initiation and since dividends do not exist prior to an initiation, initiations do not qualify as a dividend increase.

then the chain length corresponding to year $t+1$ is set to '1'. If the three conditions also hold true for year $t+2$, then the chain length is incremented by one to '2'. However, if the dividend in any year $t+j, j \geq 1,$ is the same amount as the dividend in year $t+j-1$, and conditions (ii) and (iii) hold true, then the dividend is classified as a failure-to-increase. This identification process results in a sample of 2,510 unchanged dividend announcements that are preceded by at least one dividend increase. The same firm can have more than one instance of a failure-to-increase and therefore appear in the sample more than once, with either the same or different string lengths.[54]

The complete dividend history for one particular firm, FFY Financial Corp, is displayed in Figure 5.1 to demonstrate the calculation of the chain length. The figure indicates that a dividend initiation of \$0.05 was declared on January 12, 1994 and the first dividend increase was declared on October 11, 1994 (t = 1994, using the variables defined in the previous paragraph). Inspection of the year following the first increase, $t + 1 = 1995$, reveals that the dividend declared on October 10, 1995 represents the second consecutive dividend increase because it satisfies the following conditions:

(i) The dividend change is an increase

(ii) The dividend is declared in the same quarter of the prior year, 1994

(iii) Each of the regular quarterly dividends from October 11, 1994 to July 12, 1995, inclusive, are for the same amount

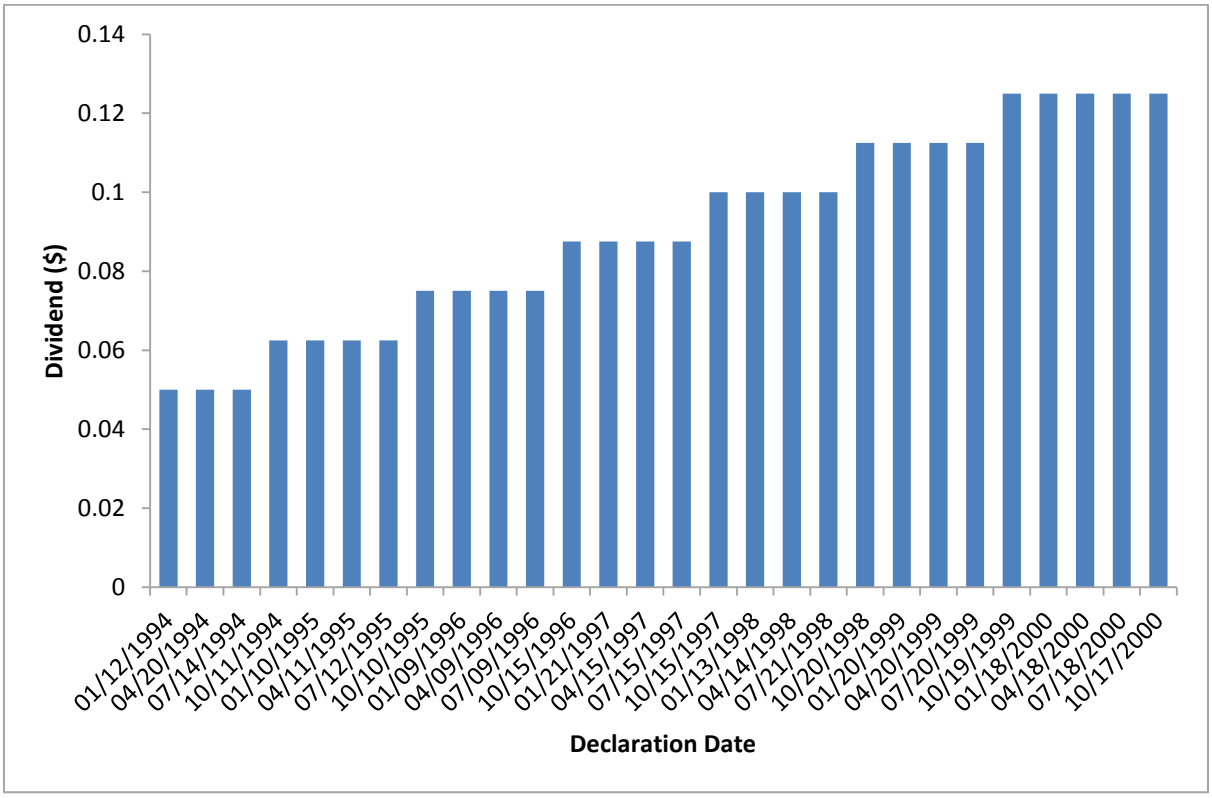
Following the same identification technique for year $t + 2$, the dividend increase declared on October 15, 1996 represents the third consecutive year containing a dividend increase. Similarly, the dividends declared on October 15, 1997, October 20, 1998 and October 19, 1999 represent the fourth, fifth and sixth consecutive yearly dividend increase, respectively.

[54] In the case of chains of consecutive earnings increases, a study by Myers et al. (2007) retains only the longest chain for each firm and another study by Barth et al. (1999) does not make reference to multiple chains implying that their sample may contain more than one chain for each firm.

Based on the pattern and timing of the six previous dividend increases, it seems reasonable to predict that a seventh consecutive dividend increase would be declared sometime during October 2000. The dividend history depicted in Figure 1 shows that a dividend was declared during the predicted quarter, but the amount of the dividend was maintained at the same level as in the previous four quarters. Therefore, the dividend declared on October 17, 2000 satisfies the definition of a failure-to-increase event, and is preceded by six consecutive yearly increases. Therefore, in terms of our naming convention the chain length equals six.

Figure 5.1
Dividend History of FFY Financial Corp.

The figure displays the amount of the adjusted dividend per share and the dividend declaration date for FFY Financial Corp. Dividend amounts and declaration dates are sourced from CRSP.



5.5 Initial Sample Description

The distribution of the initial sample of 2,510 failure-to-increase announcements partitioned by declaration year and by chain length is reported in Panel A of Table 5.1. The majority (1,700 or nearly 68%) of the initial sample consists of a failure-to-increase preceded by just one dividend increase. The number of announcements decreases monotonically with each one-year increase in the chain length. The 92 announcements that are preceded by a chain of ten or more consecutive annual dividend increases are thinly distributed across each chain-length category and are therefore combined in a single category labelled "10+".[55] The decreasing number of unchanged dividend announcements indicates that the more established is a firm's dividend-increase track record the more reluctant they are to deviate from the policy. This observation supports the opinions expressed by managers (Lintner, 1956 and Brav et al., 2005) that they favour a pattern of steadily increasing dividends and are averse to cutting the dividend. These views also have empirical support with Bessembinder and Zhang's (2014) finding that the probability of dividend increase is higher when there was a dividend increase twelve months ago, compared to the unconditional probability of an increase. In terms of the number of dividend no-changes by year, the number of failures-to-increase declines each year from 1999 through to 2003 when there are 131 announcements and then generally increases through to the maximum of 304 in 2008 and then declining in 2009. The final year of the sample, 2010, contains just 44 failure-to-increase announcements. The small number of announcements in 2010 is because we do not have data for dividends declared in the last month of the year because they are listed in the CRSP database in 2011.

[55] Seventy-seven failures-to-increase are preceded by a chain length of between ten and twenty prior consecutive annual increases, and fifteen are preceded by a chain length of between twenty-one and the maximum chain length of thirty, which occurs once.

Table 5.1
Initial Sample Description

Panel A reports the number of failure-to-increase dividend announcements by calendar year of declaration and by chain length, defined as the number of prior consecutive once-a-year dividend increases before the failure-to-increase announcement. Panel B reports the number of firms in each chain length category that split their stock at least once.

PANEL A: Distribution of the number of failure-to-increase announcements by chain length and year											
	Chain Length (years)										
Year	1	2	3	4	5	6	7	8	9	10+	TOTAL
1999	197	41	15	11	4	7	5	2	2	9	293
2000	165	42	22	10	4	7	3	0	1	8	262
2001	145	24	12	9	10	3	2	6	4	14	229
2002	105	10	7	3	3	3	4	2	0	8	145
2003	104	10	2	5	1	1	2	1	1	4	131
2004	155	22	9	3	0	3	0	0	2	7	201
2005	161	15	6	2	1	1	0	1	1	3	191
2006	170	18	19	2	4	1	1	0	0	5	220
2007	165	23	15	8	5	2	1	0	0	3	222
2008	176	47	29	20	8	3	1	3	2	15	304
2009	124	35	25	22	23	9	7	4	3	16	268
2010	33	6	2	2	1	0	0	0	0	0	44
TOTAL	1700	293	163	97	64	40	26	19	16	92	2,510
PANEL B: Number of firms that split their stock at least once sometime during the chain											
n	468	104	67	47	32	23	18	13	10	84	866

As Panel B of Table 5.1 shows, approximately one-third (866 ÷ 2510) of the overall sample of no-change announcements split their stock sometime during the dividend-increase chain that precedes the announcement. However, when we partition the sample by the length of the prior dividend-increase chain the proportion of firms splitting their stock consistently increases with each additional consecutive dividend increase up to the eight-year chain length category, with a marginal decrease for the ninth chain length category. Out of the 1700 dividend no-change announcements that are preceded by one prior increase, 468 (or, 27.5%) have a stock split in the four quarters between the increase and failure-to-increase. The proportion increases to 35.5% for firms with two consecutive dividend increases followed by a no-change announcement with a split in the eight quarters. Ninety-two firms with a record of ten or more consecutive annual dividend increases then ultimately break the pattern by announcing an unchanged dividend and just eight of the firms do not split their stock at some

point during the ten-year dividend history. The increasing incidence of a split for longer chain lengths warrants our decision to use split-adjusted dividend amounts to calculate dividend changes. If we were to exclude stocks that split, the dividend chain length categories would contain far fewer observations, particularly for longer chain lengths.

We present in Table 5.2 the firm's industry affiliation at the time of the no-change announcement. Over half (109 + 1050 = 1,159) of the sample of 2,510 dividend no-changes are announced by firms in either the Electric, Gas, And Sanitary Services or Finance, Insurance, And Real Estate industry. We include all industry sectors to demonstrate the level of industry clustering. As is the convention in dividend studies (e.g., Skinner and Soltes, 2011), in the subsequent analysis we exclude firms in the financial and utility industries because their dividends may be regulated and therefore have less information content compared to firms in other industries.

Table 5.2
Industry Affiliation

The table reports the affiliated industry for firms that announce an unchanged quarterly dividend with a history of at least one prior dividend increase in the same quarter in the previous year. For completeness we report the entire range of industries to highlight the clustering that occurs in certain industries, and the lack of observations in other industries. The classification is based on the first two digits of the firm's Securities Industry Classification (SIC) code at the time of the failure-to-increase announcement. We decompose the two-digit SIC code range 40-49 into two subgroups to separately show the number of firms that belong to the utilities industry (i.e., two-digit SIC code 49).

Two-digit SIC code range	Industry	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	TOTAL
01-09	Agriculture, Forestry, And Fishing	0	1	0	1	1	0	2	1	1	0	0	0	7
10-14	Mining	7	5	2	4	1	5	6	9	9	11	8	1	68
15-17	Construction	2	2	3	1	0	2	3	8	3	2	1	1	28
20-39	Manufacturing	96	71	72	53	33	41	59	68	52	89	94	10	738
40-48	Transportation, Communications,	13	7	4	5	3	4	12	9	11	4	13	5	90
49	Electric, Gas, And Sanitary Services	23	10	13	5	7	7	10	5	6	9	13	4	112
50-51	Wholesale Trade	14	6	5	4	3	6	4	9	8	5	7	4	75
52-59	Retail Trade	9	11	12	4	7	12	8	10	14	18	11	0	116
60-67	Finance, Insurance, And Real Estate	121	139	107	63	69	120	75	87	107	144	105	15	1,152
70-89	Services	8	10	10	5	7	4	12	14	11	22	16	4	123
91-99	Public Administration	0	0	1	0	0	0	0	0	0	0	0	0	1
TOTAL		293	262	229	145	131	201	191	220	222	304	268	44	2,510

Prior studies find that abnormal returns around dividend change announcements are significantly related to certain firm characteristics. Therefore, we use the CRSP-Compustat Merged database (CCM) to gather financial data for each firm around the time of the no-change announcement for the most recent fiscal quarter prior to the no-change announcement. We present statistics for the initial sample of 2,510 firms because, as we report later, the proportion of firms that do not qualify for the final sample is higher for firms with longer dividend increase chains. For the four variables that follow, stock price and number of shares outstanding are obtained from the Center for Research in Security Prices (CRSP) database while accounting data comes from the CRSP/Compustat Merged Database (CCM) for the fiscal quarter that precedes the no-change dividend announcement. The *Market Value of Equity* is the product of the stock price and the number of shares outstanding one trading day before the dividend no-change announcement.[56] The *Market-to-Book Ratio* equals *Market Value of Equity* divided by the total stockholder's equity where the latter figure is CCM Data Item: SEQQ. The *Leverage Ratio* equals total liabilities divided by total capital where total liabilities equals short-term debt (CCM: DLCQ) plus long-term debt (DLTTQ) and total capital equals total liabilities plus *Market Value of Equity*. *Earnings Change* equals earnings per share for the fiscal quarter that precedes the failure-to-increase announcement minus the earnings per share for the corresponding fiscal quarter in the previous fiscal year, scaled by the stock price for the fiscal quarter ending prior to the failure-to-increase announcement.

Summary statistics for each of these four variables are presented in Table 5.3. The average market value is approximately $5 billion, with a substantially smaller median of approximately $500 million, indicating that the distribution of firm size is heavily right-skewed. Firm size exhibits substantial variation when classified by the chain length at the

[56] If the stock price or number of shares outstanding is not available for the trading day before the announcement, the appropriate figures on the announcement date are used.

time of the failure-to-increase announcement. Firms with one prior increase have a median size of $453 million compared to $1,588 million when the announcement is preceded by ten or more increase. There is no obvious pattern in each of the four measures because the firms in each chain-length category are different. Analysing changes in these measures for the same firm across each dividend increase reveals a more interesting trend.

Table 5.3
Initial Sample Descriptive Statistics

Descriptive statistics on the initial sample of 2,510 dividend no-change announcements for which complete financial data is available in the CRSP/Compustat Merged Database (CCM). Accounting data item values correspond to the most recent fiscal quarter end with an earnings announcement date that precedes the failure-to-increase declaration date. Market Value is calculated as the product of the stock price and the number of shares outstanding at the end of the prior fiscal quarter. Market-to-Book ratio is defined as the Market Value of Equity divided by Stockholders Equity (CCM data Item: SEQQ). Leverage ratio is calculated as total liabilities divided by total stockholders' equity, where total liabilities equals total current liabilities (DLCQ) plus total non-current liabilities (DLTTQ). Earnings Change is measured as the change in the earnings per share before extraordinary items for the most recent quarter before the announcement relative to the prior corresponding quarter in the previous fiscal year, scaled by the stock price at the end of the fiscal quarter prior to the failure-to-increase declaration date.

	Market Value ($m)		Market-to-Book ratio		Leverage ratio		Earnings Change (%)	
Chain Length	Mean	Median	Mean	Median	Mean	Median	Mean	Median
1	4,845	453	2.64	1.71	0.32	0.28	-0.42	0.02
2	3,846	380	2.14	1.60	0.38	0.38	-1.37	-0.07
3	4,440	633	2.07	1.56	0.34	0.31	-0.88	-0.08
4	5,471	648	2.30	1.63	0.38	0.33	-0.31	-0.30
5	6,675	1,043	2.32	1.70	0.35	0.31	-1.20	-0.31
6	8,209	690	2.18	1.81	0.38	0.40	-2.18	-0.35
7	4,936	1,120	1.75	1.60	0.38	0.41	-0.09	-0.28
8	8,109	845	1.81	1.53	0.29	0.27	-0.78	-0.44
9	13,510	542	2.36	1.85	0.33	0.30	-0.76	-0.17
10+	7,006	1,588	2.34	1.83	0.35	0.34	-1.10	-0.35
TOTAL	4,986	514	2.49	1.69	0.33	0.30	-0.63	-0.04

We calculate the market value, market-to-book ratio and leverage ratio for the 92 firms with a chain length of ten or more consecutive increases at the time of each of the first ten dividend increase announcements in the chain and report the values in Table 5.4. The median market value of equity increases monotonically with each dividend increase. At the time of the tenth increase, these firms have a median market value of $1.24 billion, or

approximately four times, the $321 million when the first dividend increase is announced. Firms with a record of increasing the dividend every year are clearly a financial success. The difference between the median market value of equity at the first increase and at the tenth increase is highly significant (p-value < 0.01 using the Wilcoxon signed-rank test), but the difference in the corresponding mean value is not significant (using a t-test). The market-to-book and leverage ratios both exhibit an increasing, but non-monotonic, trend. The difference in the median value at the first increase in the chain compared to the tenth or more increase for both these ratios is highly significant (p-value < 0.01).

Table 5.4
Characteristics of Firms with Ten-Year Dividend-Increase Chains

Descriptive statistics at the time each of the first ten dividend increases for ninety-two firms that ultimately announce a failure-to-increase the dividend with a chain length of ten or more increases prior to a failure-to-increase. Financial data is for the fiscal quarter that precedes each of the ten dividend increase announcements in the chain.

Dividend	Market Value of Equity ($m)		Market-to-Book ratio		Leverage ratio	
Increase number	Mean	Median	Mean	Median	Mean	Median
1	2916	321	2.43	1.79	0.26	0.19
2	2986	361	2.30	1.69	0.26	0.18
3	3238	425	2.29	1.84	0.26	0.17
4	3653	529	2.37	1.84	0.27	0.20
5	4036	704	2.50	1.87	0.27	0.21
6	4960	706	2.52	1.98	0.26	0.19
7	5718	815	2.65	2.07	0.26	0.22
8	7210	936	2.77	2.15	0.27	0.22
9	9462	1081	2.79	2.05	0.28	0.26
10	7765	1240	2.83	2.07	0.29	0.24
TOTAL	5226	722	2.55	1.94	0.27	0.21

An unchanged dividend for firms that have demonstrated at least a decade-long policy of regularly-timed dividend increases represents a substantial shift in dividend policy. We then examine the dividend payments for the four quarters after the failure-to-increase announcement for these same firms to explore if the failure-to-increase was an aberration or a signal of lower dividends and the analysis is presented in Table 5.5. Thirty-eight firms

maintain the dividend at the same level for the following four quarters. Sixteen firms increase the dividend by an average amount of 7%, and there are twenty-three instances of a dividend decrease, with the average cut leaving the dividend at less than half the prior amount. This analysis suggests that an unchanged dividend after a long history of previous increases is a strong indicator that a dividend cut is imminent. The five firms that experience a carve-out are presented separately due to the subsequent substantial change in dividend payment amounts.

Table 5.5
Dividend Changes following a Failure-to-Increase

The table reports changes in the dividend in the four quarters following the failure-to-increase the dividend announcement for 92 firms with a record of at least ten years once-a-year dividend increases prior to the announcement.

		Percentage Change in Dividend	
Dividend Action	*n*	Mean	Median
Increase	16	7.04%	6.17%
Decrease	23	-57.05	-50.00
No change	38	0	0
Delist	10		
Carve-out	5		
TOTAL	92		

An explanation for why a firm with a long history of recurring dividend increases might interrupt the pattern and not increase the dividend may be because of an expectation of lower earnings. To explore this hypothesis we present statistics on earnings changes prior to each dividend increase leading up to the failure-to-increase announcement for firms in each chain length group in Table 5.6. We use a measure of seasonal earnings change similar to that used by Nissim and Ziv (2001) and Koch and Sun (2004) but compute the change in earnings per share relative to the previous corresponding quarter. We examine a longer history of earnings changes leading up to the failure-to-increase announcement by calculating the change for one, two, three and four quarters before the announcement according to the following equation:

$$\Delta EPS_{q,-i} = \frac{EPS_{q-i} - EPS_{q-i-4}}{P_q} \quad (5.1)$$

where $\Delta EPS_{q,-i}$ is the change in earnings per share for the *i*th quarter (i = 1 to 4) preceding the failure-to-increase announcement in quarter q, EPS_{q-i} is earnings per share for the *i*th quarter before the announcement and EPS_{q-i-4} is earnings per share for the *i*th quarter in the previous year and P_q is the stock price before the announcement.

With the exception of the shortest chain length category, the median change in seasonally-adjusted quarterly earnings is negative in the quarter immediately preceding the failure-to-increase announcement for each chain length group. The median earnings change is -0.07% prior to a no-change announcement following consecutive two dividend increases and steadily decreases to -0.35% for announcements that follow five prior increases. For firms with a record of ten or more increases, the change in earnings before the no-change announcement represents -0.35% of the stock price. An examination of earnings changes for each of the four quarters prior to a no-change announcement reveals that earnings tend to become more negative leading up the announcement. Firms with a record of ten or more dividend increase before an unchanged dividend experience earnings changes relative to the same quarter a year ago of -0.21%, -0.14%, -0.31%, and -0.35% for the four quarters leading up to the announcement. The difference in the median change in earnings one quarter before the no-changes announcement compared to five quarters before the announcement is significant for most chain-length groups. Thus the evidence in Table 5.6 suggests that one explanation for the failure to increase the dividend is a persistent pattern of declining earnings. In light of the earnings changes, the decision to maintain the dividend may be

Table 5.6
Change in Earnings Per Share

This table contains statistics on the change in earnings-per-share for the five quarters prior to a failure-to-increase announcement. Earnings per share excluding extraordinary items is extracted from the CRSP-Compustat merged (CCM) database (CCM data item EPSXQ). Change in earnings per share relative to the failure-to-increase announced in fiscal quarter q equals EPS_{q-i} minus EPS_{q-4-i} scaled by the stock price at the end of the fiscal quarter prior to the fail-to-increase announcement, for i = 1 to 5. The number of observations is not the same within each chain length group because of missing earnings per share figures in the CCM database.

	Chain Length														
		1			2			3			4			5	
Quarter relative to failure-to-increase	n	Mean	Median	n	Mean	Median	n	Mean	Median	n	Mean	Median	n	Mean	Median
-1	1677	-0.42%	0.02%	287	-1.30%	-0.07%	161	-0.88%	-0.09%	95	-0.31%	-0.30%	64	-1.26%	-0.31%
-2	1663	-0.27%	0.07%	285	0.07%	0.00%	162	-0.68%	-0.17%	97	-0.56%	-0.28%	64	-0.41%	-0.13%
-3	1640	-0.12%	0.11%	284	-0.18%	0.07%	161	-0.25%	-0.06%	97	-0.67%	-0.07%	64	-0.50%	-0.18%
-4	1622	0.12%	0.17%	283	0.04%	0.10%	162	-0.23%	0.08%	96	0.14%	0.00%	64	-0.18%	0.03%
-5	1601	0.26%	0.20%	282	0.20%	0.18%	158	-0.02%	0.13%	95	-0.28%	0.06%	64	-0.06%	0.06%
Total	8203	-0.09%	0.12%	1421	-0.24%	0.06%	804	-0.41%	0.00%	480	-0.34%	-0.08%	320	-0.48%	-0.07%
p-value ΔEPS_{q-1} - $\Delta EPS_{q-5} = 0$		<0.000	<0.000		0.001	<0.000		0.010	<0.001		0.899	0.05		0.017	<0.001
	Chain Length														
		6			7			8			9			10+	
Quarter relative to failure-to-increase	n	Mean	Median	n	Mean	Median	n	Mean	Median	n	Mean	Median	n	Mean	Median
-1	40	-2.18%	-0.35%	26	-0.09%	-0.28%	19	-0.78%	-0.44%	16	-0.76%	-0.17%	92	-1.10%	-0.35%
-2	40	-0.99%	-0.36%	26	-1.32%	-0.51%	19	-0.55%	-0.20%	16	-0.22%	0.00%	92	-0.33%	-0.31%
-3	40	-0.07%	-0.05%	26	0.73%	-0.08%	19	-0.40%	-0.09%	16	-0.72%	-0.24%	92	-0.32%	-0.14%
-4	39	0.04%	0.00%	26	0.06%	0.02%	19	0.15%	-0.07%	16	-0.51%	0.00%	92	-0.57%	-0.21%
-5	40	-0.22%	-0.24%	26	-0.09%	-0.04%	19	-0.09%	0.03%	16	-0.05%	-0.04%	92	-0.04%	0.03%
Total		-0.69%	-0.17%		-0.14%	-0.09%		-0.33%	-0.11%	80	-0.45%	-0.04%	460	-0.43%	-0.13%
p-value ΔEPS_{q-1} - $\Delta EPS_{q-5} = 0$		0.171	0.791		0.990	0.628		0.002	0.004		0.102	0.283		0.103	<0.001

interpreted favourably. To investigate this hypothesis we include prior earnings change in our estimation model.

5.6 Construction of Final Sample

To attribute abnormal returns solely to the failure to increase the dividend, we require that the failure-to-increase announcements are not affected by potentially confounding events. We restrict our analysis to the years 1999 to 2010 and use the Factiva database to identify Day 0, the date the failure-to-increase announcement becomes public knowledge.[57] To permit a clean measurement of the stock price reaction to a failure-to-increase announcement, a failure-to-increase is discarded from the initial sample if there is another price-sensitive announcement in the period within three business days before or after the Factiva-reported dividend announcement date.[58] This requirement eliminates 1,845 failure-to-increase announcements from the sample. In addition, 121 failures-to-increase are eliminated because the announcement date could not be identified. A further 4 observations are discarded because of CRSP errors and 8 announcements occurred on a day when the stock market was closed. Lastly, 43 observations are removed due to missing financial data in the CRSP/Compustat Merged Database (CCM). The final sample contains 489 failure-to-increase announcements made during 1999-2010.[59] Thus, less than twenty percent of the full sample remains. The

[57] CRSP defines the dividend declaration date (DCLRDT) as the date the dividend is declared by the firm's Board of Directors. In most cases, newswires report a dividend increase announcement (i.e. press release) on the same day it is declared by the firm's Board of Directors. In a few cases, the newswires report the increase the day after it is declared by the Board, and on rare occasions the dividend is announced up to two weeks after it is declared. In the latter case, this delay may be due to a CRSP error, or that the Board meets to declare the increased dividend on a particular day but instead of publicly declaring the dividend increase on the same, or the next day, it is declared some days later.

[58] Earnings announcements were the most common type of price-sensitive announcements occurring in the vicinity of dividend announcements. Other less common potentially confounding announcements include stock splits, stock buybacks, special dividend declarations, and other announcements such as lawsuits and divestitures, among others.

[59] For 435 of the 489 (or, 89%) failure-to-increase announcements the dividend is publicly announced on the same day it is declared by the firm's Board of Directors. In the remaining 54 cases newswires report the

distribution of the final sample by announcement year is presented in Table 5.7. The distribution is generally similar to that shown in Table 5.1 so the earlier conclusions apply.

Table 5.7
Distribution of Failure-to-Increase Announcements

The table reports the number of failure-to-increases announcements classified by the announcement year and the chain length for a sample of 494 failure-to-increase announcements made between January 1, 1999 and December 31, 2010 with no confounding announcement within three trading days either side of the announcement. Announcements preceded by a chain length of five or more consecutive once-a year regularly-timed dividend increases are combined in a single category labelled '5+.'

Chain Length	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	TOTAL
1	32	27	23	27	21	24	41	44	31	40	27	8	345
2	4	6	1	2	0	3	2	3	6	8	11	1	47
3	6	5	2	2	0	0	2	2	4	3	5	0	31
4	4	2	1	1	0	0	0	1	2	5	5	1	22
5+	4	2	7	6	1	1	0	1	2	7	12	1	44
TOTAL	50	42	34	38	22	28	45	51	45	63	60	11	489

5.7 Calculating Abnormal Returns

We use the event study methodology of Brown and Warner (1980, 1985) to measure abnormal returns. Risk-adjusted abnormal returns are calculated using the equation:

$$AR_{i,t} = R_{i,t} - (\alpha_i - \beta_i R_{m,t}) \qquad (5.2)$$

where $AR_{i,t}$ is the abnormal return for stock i for day t, $R_{i,t}$ is the return on stock i for day t, $R_{m,t}$ is the return on the CRSP value-weighted market index for day t, α_i and β_i are the estimates of the intercept and slope respectively for stock i from a market model regression estimated using a maximum estimation length of 255 trading days and a minimum estimation length of 30 trading days computed from data over the interval [-264, -10] relative to the

dividend announcement on days other than the CRSP-reported dividend declaration date (DCLRDT), with 27 dividends publicly announced more than five days after the declaration date.

dividend increase announcement date.[60] We sum the abnormal returns for the day of the failure-to-increase announcement and the following trading day to form a two-day cumulative abnormal return as Dewenter and Warther (1998).

5.8 Results

Mean abnormal returns for the two-day announcement period partitioned by the number of years of prior consecutive dividend increases are reported in Table 5.8. Across all 489 failure-to-increase announcements the mean market-adjusted abnormal return is 0.33%, and is statistically significant. The positive abnormal returns suggest that, for firms that have a record of at least one annual dividend increase in the prior year, the announcement of no change in the dividend is interpreted by the market as a favourable event. Aharony and Swary (1980) report abnormal returns of approximately 1% for dividend increase announcements and abnormal returns that are not significantly different than zero for announcements of no change in the dividend. Therefore, the news conveyed by an unchanged dividend following a pattern of increases is not as good as that conveyed by a dividend increase but is viewed more positively than the typical unchanged dividend announcement. Thus, our preliminary results suggest that announcements of no change that interrupt a pattern of recurring increases attract positive returns. When we classify our sample by the length of the dividend-increase chain prior to the no-change announcement, abnormal returns are significant only for firms with a chain length of five or more.

[60] Grullon et al. (2002) subtract the return on the value-weighted market index from the stock return to measure abnormal returns and obtain similar results when they use the equal-weighted market index instead of the value-weighted market index.

Table 5.8
Mean Abnormal Returns

This table reports the mean two-day abnormal return (expressed in percent) around the announcement of a failure to increase the dividend for a sample of 489 announcements with a declaration date between 1 January 1999 and 31 December 2010, classified by the length of the chain of prior consecutive years of once-a-year dividend increases. Abnormal returns are calculated using the market model where the relevant parameters are estimated over the interval starting 255 days before the announcement and ending 10 days before the announcement. The failure-to-increase announcement is the only price-sensitive announcement that occurs in the three trading days either side of the announcement date. Chains of five or more prior consecutive single-year dividend increases are combined in a single category labelled '5+'.

Chain Length	*n*	CAR[0, +1]	Z-statistic
1	344	0.28	1.33
2	48	-0.06	-0.11
3	27	0.53	0.56
4	22	0.70	0.58
5+	49	0.80	1.71*
TOTAL	489	0.33	1.86*

*, **, and *** denote statistical significance at the 10%, 5% and 1% levels, respectively.

For this unique group of unchanged dividend announcements, the overall positive abnormal returns suggest that these announcements convey new information. However, we explore the possibility that this result may be explained by factors other than the firm's dividend payment pattern prior to the failure-to-increase announcement. To examine this hypothesis we gather data on a number of firm specific characteristics including the market value of equity, the market-to-book ratio, the leverage ratio and two earnings-related measures. No existing study of dividend change announcements simultaneously controls for all of these variables.

We motivate each of the variables based on theory and the results of other studies but apply some slight definitional modifications. Larger firms have less information asymmetry than smaller firms and so we use the firm's market value of equity as a proxy for the level of information asymmetry. The firm's market-to-book ratio in included as an explanatory variable following the evidence of Lang and Litzenberger (1989) that abnormal returns around dividend increase announcements are significantly different depending on whether the

ratio is higher or lower than one. However, rather than using a binary measure as Lang and Litzenberger, we use a continuous measure and calculate the ratio of the market value of the firm to the book value. Grullon et al. (2002) report changes in financial leverage around dividend change announcement and hence we also include this variable in our multivariate model.

No other price-sensitive information is released in the three business days surrounding the sample of no-change dividend announcements. However, there remains the possibility that the market returns may be different depending on the sign of the earnings change prior to the dividend announcement. Kane et al. (1984), Easton (1991), Conroy et al. (2000) and Cheng and Leung (2006) study earnings and dividend announcements made in close proximity to one another and tend to find that abnormal returns around dividend changes are more significantly related to the sign of both the earnings and dividend change rather than the size of the earnings or dividend change. Similar to these four studies we also allow for the possibility that the market reaction to a dividend announcement is different depending on whether recent earnings have decreased or not decreased. Our sample contains only unchanged dividends and so we require only a single dummy variable that represents the sign of the earnings change in contrast to the aforementioned studies that require nine dummy variables to capture the nine possible earnings and dividend change sign combinations.

When we classify abnormal returns around failure-to-increase dividend announcements by the sign of the earnings change, we find evidence of a noticeable difference in announcement-period returns. As shown in Table 5.9, abnormal returns are a highly significant 0.90% when the most recent earnings have decreased compared to the previous corresponding quarter and an insignificant -0.28% when the earnings are the same or higher. While it is known that the investors use both the earnings figure and dividend change amounts to make inferences about the firms' prospects (e.g., Aharony and Swary,

1980), our result reveals unchanged dividend announcements also have substantial information content, particularly when earnings are lower. The asymmetric reaction to a dividend announcement validates including the sign of the earnings change, as well the magnitude of the change, in our multivariate model.

Table 5.9
Mean Abnormal Return by Earnings Change Sign

This table reports the mean two-day abnormal return (expressed in percent) around the announcement of a failure to increase classified by the sign of the most recent earnings change. Earnings Change is the change in earnings-per-share per share for the most recent quarter prior to the failure-to-increase announcement minus earnings per share for the previous corresponding quarter, scaled by the stock price at the start of the quarter prior to the announcement. The mean and median Earnings Change (in percent) is presented for earnings decreases (Earnings Change < 0) and earnings increases (Earnings Change ≥ 0).

Earnings Change < 0				Earnings Change ≥ 0			
		Earnings Change (%)				Earnings Change (%)	
n	CAR[0, +1]	Median	Mean	*n*	CAR[0, +1]	Median	Mean
250	0.90***	-1.36	-8.28	239	-0.28	0.34	1.05

*, **, and *** denote statistical significance at the 10%, 5% and 1% levels, respectively.

Summary statistics for the independent variables classified by the length of the chain at the time of the failure-to-increase announcement are reported in Table 5.10. The mean market value of equity falls from $5 billion for the initial sample in Table 5.3 to $4.3 billion in Table 5.10. This decrease is not surprising given that high market value of equity is likely to be associated with firms that are more widely followed in the press and therefore more likely to have confounding announcements which cause them to be eliminated from the sample. The median value for the market-to-book ratio, leverage ratio and earnings change are similar (p-value = 0.55, 0.80 and 0.20, respectively) for the two samples and indicates that the firms in the final sample are similar in most respects to those in the preliminary sample, except that they tend to have smaller market values. It is still evident in Table 5.10 that firms with a chain length of five or more are much larger than firms with a chain length

of four or fewer. For all chain length groups the distribution of market value of equity and market-to-book remain heavily right-skewed as evidenced by the much higher mean relative to the median for each chain length. In addition, the earnings change variable indicates negative earnings changes for each chain length category, and the change generally becomes more negative as the chain length increases.

Table 5.10
Final Sample Descriptive Statistics

This table reports the mean and median values for four firm characteristic variables partitioned by the length of the chain of consecutive once-a-year dividend increases at the time of the failure-to-increase dividend announcement. Accounting data is for the fiscal year-end that precedes the failure-to-increase declaration date by at least thirty days.

		Market Value of Equity ($m)		Market-to-Book ratio		Leverage Ratio		Earnings Change	
Chain Length	*n*	Mean	Median	Mean	Median	Mean	Median	Mean	Median
1	345	4631	988	3.60	2.01	0.19	0.16	-1.07	-0.14
2	47	2867	829	2.80	1.97	0.21	0.16	-2.37	-0.40
3	31	1710	598	2.22	1.66	0.24	0.18	-0.99	-0.44
4	22	3879	1300	2.35	1.98	0.24	0.21	-0.42	-0.43
5+	44	5341	2096	3.09	2.05	0.19	0.18	-2.77	-0.85
TOTAL	489	4306	1030	3.33	2.00	0.20	0.17	-1.31	-0.22

5.9 Regression Model

To investigate if the length of the prior dividend-increase chain is related to the magnitude of abnormal returns around dividend change announcements, we estimate the following multivariate regression model for each firm *i*.

$$CAR = \beta_0 + \beta_1 lnMVE + \beta_2 MBR + \beta_3 LVR + \beta_4 EPS\_CHG + \beta_5 EPS\_DECR + \beta_6 CHAIN\_LENGTH + \varepsilon \quad (5.3)$$

where

CAR = the two-day cumulative market-adjusted return from the day of the announcement to the following trading day

lnMVE = the natural logarithm of the firm's market value of equity

MBR = the firm's market-to-book ratio

LVR = the firm's leverage ratio

EPS_CHG = the change in earnings per share calculated using the quarter before the announcement and the same quarter of the prior year, scaled by the stock price

EPS_DECR = 1 if the earnings per share for the most recent quarter minus the earnings per share for the same quarter of the prior year is negative, and 0 otherwise

CHAIN_LENGTH = the number of consecutive years of once-a-year regularly-timed dividend increases prior to the announcement.

Our choice of explanatory variables is motivated by prior research. For example, abnormal returns are related to various firm characteristics such as firm size (Amihud and Li, 2006) market-to-book ratio (Lang and Litzenberger, 1989), and recent earnings changes (Koch and Sun, 2004). Our model also builds on the model used in Myers et al. (2007) to study returns around the termination of consecutive earnings increase patterns and includes an explanatory variable that measures the length of the dividend-increase chain that precedes the failure-to-increase announcement. We also include year fixed effects to control for variation in abnormal returns across the sample period.

The correlation matrix reported in Table 5.11 shows little evidence of strong correlation between any pair of independent variables, suggesting our regression model is free from multicollinearity.

Table 5.11
Correlation Matrix

The table reports the correlation between each pair of independent variables for a sample of 489 failure-to-increase announcements. *lnMVE* is the natural logarithm of the market value of equity; *MBR* is the market-to-book ratio; *LVR* is a measure of financial leverage and *EPS_CHG* is the change in earnings per share.

	lnMVE	*MBR*	*LVR*	*EPS_CHG*
lnMVE	1			
MBR	0.180	1		
LVR	0.069	-0.104	1	
EPS_CHG	-0.006	0.045	-0.210	1

The estimated coefficient and associated *t*-statistic for each variable in Equation (5.3) is reported in Table 5.12. The coefficient of *CHAIN_LENGTH* is 0.01% and significant at the 10% level. This finding indicates that, after controlling for other explanatory variables, breaking a dividend-increase pattern and instead maintaining the dividend is associated with returns that are one basis point higher for each additional one-year increase in the length of the prior dividend-increase pattern. Although we study breaks in dividend-increase patterns, the study of breaks in patterns of earnings increases by Myers et al. (2007) provides an interesting comparison. They find that earnings decrease announcements that break a chain of consecutive earnings increases are associated with more negative returns for longer prior chain lengths. In the case of dividends however, breaking a previous dividend-increase pattern is interpreted more favourably by investors the longer the prior pattern. The coefficient on the dummy variable, *EPS_DECREASE*, suggests that maintaining the dividend amount is associated with significantly higher returns when earnings have decreased. In

contrast to Koch and Sun (2004) who report that dividend changes are significantly related to the magnitude of prior earnings, we find no evidence that failures-to-increase are related to the size of prior earnings changes.

Table 5.12
Regression Results

The table reports the results of estimating the following regression model:
$CAR = \beta_0 + \beta_1 lnMVE + \beta_2 MBR + \beta_3 LVR + \beta_4 EPS\_CHG + \beta_5 EPS\_DECREASE + \beta_6 CHAIN\_LENGTH$
The model is estimated using a sample of 489 zero percent dividend change announcements with a declaration date between January 1, 1999 and December 31, 2010 with at least one prior dividend increase. CAR is the two-day cumulative market-adjusted abnormal return, CAR[0, +1], using the value-weighted market index. *lnMVE* is the natural logarithm of the market value of equity (in $ millions) where the market value of equity (MVE) is calculated as the product of the stock price and the number of shares outstanding one trading day before the failure-to-increase announcement. The market-to-book ratio (*MBR*) is calculated as MVE divided by total stockholders' equity. The leverage ratio (*LVR*) is calculated total liabilities divided by total stockholders' equity, where total liabilities equals total current liabilities plus total non-current liabilities. *EPS_CHG* is the change in earnings per share for the most recent quarter relative to the same quarter for the previous corresponding period, expressed as a percentage. *EPS_DECREASE* is a dummy variable that equals one if the earnings per share for the most recent quarter minus the earnings per share for the same quarter for the previous corresponding period is negative, and zero otherwise. *CHAIN_LENGTH* is the number of consecutive years of once-a-year dividend increases before the failure-to-increase announcement. Two-tailed *t*-statistics appear in parentheses.

Variable	Coefficient
Constant	-0.0034
	(-0.21)
lnMVE	-0.0001
	(-0.13)
MBR	0.0001
	(0.41)
LVR	0.0065
	(0.82)
EPS_CHG	-0.0007
	(-0.02)
EPS_DECREASE	0.0108***
	(3.78)
CHAIN_LENGTH	0.0008
	(1.92)*
Year Fixed Effects	Yes
F-statistic	4.07***

*, **, and *** denote statistical significance at the 10%, 5% and 1% levels, respectively

5.10 Conclusion

This study investigates abnormal returns around unchanged dividend announcements by firms with a predictable history of prior dividend increases. Previous studies find these announcements are associated with abnormal returns that are not significantly different from zero. We also study no-change dividend announcements but form a sample of announcements that are preceded by at least one increase that was announced in the same quarter of the prior year. Because firms tend to follow the same dividend-increase frequency, the market may expect the firm to continue the pattern firms, and this expectation should increase the more often the pattern has been repeated in the past. We find evidence of significantly positive abnormal returns when a firm with a history of dividend increases fails to increase the dividend at the expected time. This result suggests that our unique sample of dividend announcements convey positive information. When we control for firm characteristics and the most recent earnings we also find that the information content of announcements of unchanged dividends is greater when earnings have recently decreased.

Chapter Six

Conclusions

6.1 Thesis Summary

This thesis, in a collection of four essays, contributes to an understanding of long-run dividend policy by exploring the market response to dividend announcements for firms that exhibit a pattern of repeated dividend increases. Many firms follow a convention of increasing the dividend around the same time each year for many years in succession. The existence of these patterns of regularly-timed dividend increases is consistent with managers' claims expressed in surveys that they seek to maintain a consistent dividend policy. The prevailing explanation for why firms display dividend consistency is that stockholders reward firms that follow such a policy.

The first essay of this thesis studies long-term abnormal returns following each dividend increase to determine if firms with a stable dividend-increase schedule attract a market reward. The subsequent three chapters investigate short-term returns around dividend announcements. Dividend changes have information content and therefore the sign and magnitude of the price reaction in response to a dividend change announcement examined using an event study methodology identifies the extent of information that is conveyed by the announcement. The essay explores the views expressed in the literature that the expectation of a dividend change, and therefore the magnitude of abnormal returns around a change, may be different based on the length and the pattern of dividends before the dividend change announcement. The essay is the first research work to consider that the level of information conveyed by a dividend change may be different based on how often a dividend change has already occurred. Since managers aim to maintain a predictable dividend-increase schedule,

and stable dividend-increase patterns are in fact observable, the market may learn to expect a dividend increase once a dividend increase pattern has been established. The second and third essays study short-term returns around each successive dividend increase announcement in the U.S. and Australia, respectively, to discover if the market displays evidence of learning. These two essays explore the dividend-increase pattern phenomenon in the capital markets of two countries with different dividend payment frequencies and differences in the way dividends are announced. The final essay builds on the existence of patterns of consecutive dividend increases and studies market returns for firms that break a consistent dividend-increase pattern. One way the pattern breaks is when the firm announces an unchanged dividend. Analysis of abnormal returns around these announcements, referred to as failures-to-increase, shed light on how the market responds when dividend-increase expectations are not met, and if the duration of the dividend policy is associated with short-term abnormal returns around the announcement.

6.2 The Dividend-Increase Repetition Reward

The purpose of this essay is to provide empirical evidence to support the belief that firms are rewarded for maintaining a consistently increasing dividend. Prior literature documents positive annual abnormal returns following dividend increase announcements but does not consider how returns are related to long-term dividend policy involving dividend increase patterns. This essay identifies firms with a policy of consecutive annual dividend increases to examine if they attract a premium, as measured by annual buy-and-hold abnormal returns. Starting from a sample of over 9,000 first-time dividend increases announced by U.S. firms between 1971 and 2006, we then identify firms that continue to increase the dividend each year in the same quarter, for up to ten consecutive years. We use a matched-firm technique to

measure abnormal returns for the five years following each consecutively-numbered dividend increase from one to ten. Abnormal returns are the largest following the first dividend increase announcement. The size of the annual post-announcement abnormal return declines with each successive dividend increase, but remains significantly positive, from the second to the fifth increase. Buy-and-hold abnormal returns following the sixth and later increases are not statistically distinguishable from zero. The positive buy-and-hold abnormal returns for dividend-increasing firms that are evident following the first to the fifth increase indicate that firms attract a reward for maintaining a stable dividend-increase policy and provide a motivation for why firms initiate and maintain such a policy. However, the reward is not equal across each increase, but eventually declines to zero for the sixth and successive increases. These findings provide empirical support for managers' long-standing belief that shareholders prefer consistently increasing dividends. The initial attraction and then decline in the size of the abnormal return following each successive dividend increase is also consistent with a reputation-building hypothesis. Each dividend increase reinforces the firm's commitment to further dividend increases. The reduction in the size of abnormal returns suggests that by the sixth dividend the firm has developed a sufficiently long track record of dividend increases to convince the market of the high likelihood that dividend increases will continue in the future.

6.3 Are Certain Dividend Increases Predictable? The Effect of Repeated Dividend Increases on Market Returns

The second essay contributes to an understanding of how the information content of a dividend increase is related to the prior pattern of dividend increases by that firm. In an efficient market the information conveyed by a dividend increase announcement should be incorporated into prices within a short time period. From an initial sample of nearly 20,000

dividend increase announcements that occur between 1999 and 2009 in the U.S. we compute the number of prior years of consecutive annual dividend increases. Dividends are not always announced concurrently with earnings and we carefully identify the day the dividend is publicly announced and discard announcements if another announcement is made in the surrounding days. We then calculate short-term abnormal returns for the remaining sample of 2,900 increases confident that the stock price reaction is not confounded with any other information and can be attributed to the information conveyed by the dividend increase announcement only. For the full sample the average abnormal return is 20 basis points, and highly significant. Partitioning the results by the consecutively-numbered dividend increase indicates that the returns are highly significant for the first and second increase, weakly significant for the eighth increase, and indistinguishable from zero for all other increases. Our multivariate results control for potentially alternative explanations such as the size of the increase and the value of the firm and demonstrate that abnormal returns are significant for the first and second increase. Our results confirm that the market interprets a dividend increase announcement in conjunction with information about the prior dividend history, inferring future dividend increases and therefore not reacting at subsequent announcements. As is the case with other repeating corporate events such as splits, rights issues, and steadily-increasing earnings, our results are intuitive and suggest that the market quickly learns to anticipate an event based on the past record.

6.4 Are All Dividends Created Equal? Australian Evidence of Dividend-Increase Track Records

In this essay we examine short-term returns around repeated dividend increases announced by Australian firms. This analysis demonstrates that empirical support for the market learning

hypothesis that is evident in the U.S. market is also apparent in a smaller capital market with a different institutional setting. We identify a sample of 1,350 dividend increases announced between 1994 and 2013 categorised by the annual dividend-increase track record length from one up to ten or more. Earnings and dividends are announced simultaneously in Australia and therefore it is not possible to identify a clean dividend increase announcement in the same way that we can for the U.S. market in the previous essay. To capture the earnings and dividend-related information already impounded into stock prices, we use analysts' expected earnings and dividend figures. We build on existing Australian literature and control for current earnings but also incorporate an additional variable to control for surprises related to future earnings expectations. In Australia, like the U.S., there is a tendency for the magnitude of the increase to become smaller and the size of the firm to become larger, with each repetition of a dividend increase as the firm becomes more successful and increases in market capitalisation. Therefore, we estimate a multivariate model to investigate if there remains a difference in returns across each sequentially-numbered dividend increase after controlling for these, and other, variables. The results indicate that the first three dividend increases are associated with significant positive abnormal returns. Consistent with prior literature abnormal returns are higher for dividend increases of a larger magnitude, and negatively related with firm size. Positive earnings surprises attract significant abnormal returns, irrespective of whether the dividend surprise is negative, zero or positive. The number of times a dividend increase has already occurred has incremental explanatory power, over and above factors already known to be correlated with abnormal returns around dividend increase announcements.

6.5 When No-News is Good News: Failing to Increase Dividends

The previous three essays document the prevalence of firms with a regular dividend-increasing history. The disappearance of abnormal returns after two or three dividend increases provide support for the hypothesis that the market demonstrates the ability to anticipate an increase using the past dividend-increase history. In this essay we study the stock price reaction to an event when the event does not occur as expected. The prior three essays show how the habit of regularly increasing the dividend builds expectations and this essay explores the implications of failing to continue an established dividend pattern. We construct a sample of announcements of unchanged dividends but where the announcement is preceded by one or more prior dividend increases. We refer to these announcements as failures-to-increase because they interrupt a past dividend-increase pattern. Prior literature reports that announcements that the dividend will be maintained at the same amount as the previous period are associated with returns that indistinguishable from zero. In contrast, our unique sample of unchanged dividend announcements displays significantly positive returns, which are higher when the firm has also recently announced lower earnings. The regression model results show that the length of the dividend-increase chain is positively related with announcement-period abnormal returns. The positive coefficient attached to the length of the dividend pattern suggests the market interprets the decision to maintain the dividend as a positive event.

These four essays contribute to a better understanding of how the stock market assesses dividend-increase repetition. Dividends are sticky, tending to increase over time and there are many firms that increase their dividend with predictable regularity. Once a dividend-increase pattern is established there is a high likelihood of subsequent increases. The changes in

abnormal returns that we document each time a dividend is announced indicates that the market reaction to a dividend announcement is not independent of the past history, but is interpreted in relation to the long-term dividend history.

References

Aharony, J. and Swary, I. 1980, 'Quarterly dividend and earnings announcements and stockholders' returns: An empirical analysis', *Journal of Finance*, vol. 35, 1-12.

Amihud, Y. and Li, K. 2006, 'The declining information content of dividend announcements and the effects of institutional holdings', *Journal of Financial and Quantitative Analysis*, vol. 41, 637-660.

Anderson, W. 2009, 'Alternative event study methodology for detecting dividend signals in the context of joint dividend and earnings announcements', *Accounting and Finance*, vol. 49, pp. 247-65.

Baker, M. and Wurgler, J. 2012, 'Dividends as reference points: A behavioral signaling approach', NBER Working Paper No. 18242.

Balachandran, B., Krishnamurti, C., Theobald, M. and Vidanapathirana, B. 2012, 'Dividend reductions, the timing of dividend payments and information content', *Journal of Corporate Finance*, vol. 18, 1232–1247.

Barber, B. and Lyon, J. 1997, 'Detecting long-run abnormal stock returns: the empirical power and specification of test statistics', *Journal of Financial Economics*, vol. 43, 341–372.

Barth, M., Elliott, J. and Finn, M. 1999, 'Market rewards associated with patterns of increasing earnings', *Journal of Accounting Research*, vol. 37, 387-413.

Bartov, E., Givoly, D. and Hayn, C. 2002, 'The rewards to meeting or beating earnings expectations', *Journal of Accounting and Economics*, vol. 33, 173-204.

Benartzi, S., Michaely, R. and Thaler, R. 1997, 'Do changes in dividends signal the future or the past?' *Journal of Finance*, vol. 52, 1007-1034.

Bessembinder, H. and Zhang, F. 2014, 'Predictable corporate distributions and stock returns', Working paper, University of Utah.

Brav, A., Graham, J., Harvey, C. and Michaely, R. 2005, 'Payout policy in the 21st century', *Journal of Financial Economics*, vol. 77, 483-527.

Brown, P., How, J. and Verhoeven, P. 2008, 'The accuracy of analysts' dividend forecasts around the world', *Pacific-Basin Finance Journal*, vol. 16, 411–435.

Brown, S. and Warner, J. 1980, 'Measuring security price performance', *Journal of Financial Economics,* vol. 8, 205-258.

Brown, S. and Warner, J. 1985, 'Using daily stock returns: The case of event studies', *Journal of Financial Economics,* vol. 14, 3-31.

Charest, G. 1978, 'Dividend information, stock returns and market efficiency – II', *Journal of Financial Economics,* vol. 6, 297-330.

Charitou, A., Lambertides, N. and Theodoulou, G. 2010, 'The effect of past earnings and dividend patterns on the information content of dividends when earnings are reduced', *Abacus*, vol. 46, 153-187.

Charitou, A., Lambertides, N. and Theodoulou, G. 2011, 'Losses, dividend reductions, and market reaction associated with past earnings and dividends patterns', *Journal of Accounting, Auditing & Finance*, vol. 26, 351-382.

Chemmanur, T. and Tian, X. 2013, 'Communicating private information to the equity market before a dividend cut: An empirical analysis', Forthcoming, *Journal of Financial and Quantitative Analysis*, vol. 47, 933-972.

Cheng, L. and Leung, T. 2006, 'Revisiting the corroboration effects of earnings and dividend announcements', *Accounting and Finance*, vol. 46, 221-241.

Conroy, R., Eades, K. and Harris, R. 2000, 'A test of the relative pricing effects of dividends and earnings: Evidence from simultaneous announcements in Japan', *Journal of Finance*, vol. 55, 1199-1227.

D'Mello, R., Tawatnuntachai, O. and Yaman, D. 2003, 'Does the sequence of seasoned equity offerings matter?' *Financial Management*, vol. 32, 59-86.

DeAngelo, H. and DeAngelo, L. 1990, 'Dividend policy and financial distress: An empirical investigation of troubled NYSE firms', *Journal of Finance*, vol. 45, 1415-1431.

DeAngelo, H., DeAngelo, L. and Skinner, D. 1992, 'Dividends and losses', *Journal of Finance*, vol. 47, 1837-1863.

DeAngelo, H. and DeAngelo, L. 2007, 'Capital structure, payout policy, and financial flexibility', Marshall School of Business Working Paper No. FBE 02-06.

Degeorge, F., Patel, J. and Zeckhauser, R. 1999, 'Earnings management to exceed thresholds', *Journal of Business*, vol. 72, 1-33.

Denis, D., Denis, D. and Sarin, A. 1994, 'The information content of dividend changes: cash flow signaling, overinvestment, and dividend clienteles', *Journal of Financial and Quantitative Analysis*, vol. 29, 567-587.

Dewenter, K. and Warther, V. 1998, 'Dividends, asymmetric information, and agency conflicts: Evidence from a comparison of the dividend policies of Japanese and U.S. firms', *Journal of Finance*, vol. 53, 879-904.

Dielman, T. and Oppenheimer, H. 1984, 'An examination of investor behavior during periods of large dividend changes', *Journal of Financial and Quantitative Analysis*, vol. 19, 197-216.

Eades, K., Hess, P. and Kim, E. 1985, 'Market rationality and dividend announcements', *Journal of Financial Economics*, vol. 14, 581-604.

Easton, S. 1991, 'Earnings and dividends: Is there an interaction effect?', *Journal of Business, Finance & Accounting*, vol. 18, 255-266.

Elliott, J. and Hanna, J. 1996, 'Repeated accounting write-offs and the information content of earnings', *Journal of Accounting Research*, vol. 34, 135-155.

Fama, E. and Babiak, H. 1968, 'Dividend policy: an empirical analysis', *Journal of the American Statistical Association*, vol. 63, 1132-1161.

Firth, M. 1996, 'Dividend changes, abnormal returns, and intra-industry firm valuations', *Journal of Financial and Quantitative Analysis*, vol. 31, 189-211.

Floyd, E., Li, N. and Skinner, D. 2013, 'Payout policy through the financial crisis: The growth of repurchases and the resilience of dividends', University of Chicago Working Paper No. 12-01.

Grullon, G., Michaely, R., Benartzi, S. and Thaler, R. 2005, 'Dividend changes do not signal changes in future profitability', *Journal of Business*, vol. 78, 1659-1682.

Grullon, G., Michaely, R. and Swaminathan, B. 2002, 'Are dividend changes a sign of firm maturity?', *Journal of Business*, vol. 75, 387-424.

Harris, L. and Gurel, E. 1986, 'Price and volume effects associated with changes in the S&P 500 list: New evidence for the existence of price pressures', *Journal of Finance*, vol. 41, 815-29.

Healy, P. and Palepu, K. 1988, 'Earnings information conveyed by dividend initiations and omissions', *Journal of Financial Economics*, vol. 21, 149-175.

Huang, G., Liano, K., Manakyan, H. and Pan, M. 2008, 'The information content of multiple stock splits', *Financial Review*, vol. 43, 543-567.

Ikenberry, D., Rankine, G. and Stice, E. 1996, 'What Do Stock Splits Really Signal?', *Journal of Financial and Quantitative Analysis*, vol. 31, 357-375.

Iqbal, A. 2008, 'The importance of the sequence in UK rights issues', *Journal of Business, Finance & Accounting*, vol. 35, 150-176.

Jensen, G., Lundstrum, L. and Miller, R. 2010, 'What do dividend reductions signal?', *Journal of Corporate Finance*, vol. 16, 736–747.

Kane, A., Lee, Y. and Marcus, A. 1984, 'Earnings and dividend announcements: Is there a corroboration effect?', *Journal of Finance*, vol. 39, 1091-1099.

Kasznik, R. and McNichols, M. 2002, 'Does meeting earnings expectations matter? Evidence from analyst forecast revisions and share prices', *Journal of Accounting Research*, vol. 40, 727-759.

Koch, A. and Sun, A. 2004, 'Dividend changes and the persistence of past earnings changes', *Journal of Finance*, vol. 59, 2093–2116.

Lang, L. and Litzenberger, R. 1989, 'Dividend announcements: Cash flow signaling vs. free cash flow hypothesis?', *Journal of Financial Economics*, vol. 24, 181-191.

Leary, M. and Michaely, R. 2011, 'Determinants of dividend smoothing: Empirical evidence', *Review of Financial Studies*, vol. 24, 3197-3249.

Leftwich, R. and Zmijewski, M. 1994, 'Contemporaneous announcements of dividends and earnings', *Journal of Accounting, Auditing and Finance*, vol. 9, 725-62.

Li, W. and Lie, E. 2006, 'Dividend changes and catering incentives', *Journal of Financial Economics*, vol. 80, 293-308.

Lintner, J. 1956, 'Distribution of incomes of corporations among dividends, retained earnings, and taxes', *American Economic Review*, vol. 46, 97-113.

McInnis, J. 2010, 'Earnings smoothness, average returns, and implied cost of equity capital', *The Accounting Review*, vol. 85, 315–341.

Michaely, R., Thaler, R. and Womack, K. 1995, 'Price reactions to dividend initiations and omissions: Overreaction or drift?', *Journal of Finance*, vol. 50, 573-608.

Mikhail, M., Walther, B. and Willis, R. 2004, 'Earnings surprises and the cost of equity capital', *Journal of Accounting, Auditing & Finance*, vol. 19, 491-513.

Miller, M. and Modigliani, F. 1961, 'Dividend policy, growth, and the valuation of shares', *Journal of Business*, vol. 34, 411-433.

Myers, J., Myers, L. and Skinner, D. 2007, 'Earnings momentum and earnings management', *Journal of Accounting, Auditing & Finance*, vol. 22, 249-284.

Nissim, D. and Ziv, A., 2001, 'Dividend changes and future profitability', *Journal of Finance*, vol. 56, 2111-2133.

Pettit, R. 1972, 'Dividend announcements, security performance, and capital market efficiency', *Journal of Finance*, vol. 27, 993-1007.

Pilotte, E. and Manuel, T. 1996, 'The market's response to recurring events: The case of stock splits', *Journal of Financial Economics*, vol. 41, 111-127.

S&P Dow Jones Indices. 2014, <http://au.spindices.com/documents/additional-material/divstat-dividend-action-report.xlsx>

Shumway, T. 1997, 'The delisting bias in CRSP data', *Journal of Finance*, vol. 52, 327-340.

Skinner, D. 2008, 'The evolving relation between earnings, dividends, and stock repurchases', *Journal of Financial Economics*, vol. 87, 582–609.

Skinner, D. and Soltes, E. 2011, 'What do dividends tell us about earnings quality?', *Review of Accounting Studies*, vol. 16, 1-28.

TJX Companies. 2011, 'The TJX Companies, Inc. Announces 27% Increase in Common Stock Dividend', <http://investor.tjx.com/phoenix.zhtml?c=118215&p=irol-newsArticle&ID=1546926&highlight=>

Watts, R. 1973, 'The information content of dividends', *Journal of Business*, vol. 46, 191-211.

Xie, Y. 2011, 'The market effects of breaking a string of meeting or beating analysts' expectations: Downward revision of future cash flows or increase in cost of equity capital?', *Journal of Business Finance & Accounting*, vol. 38, 95-118.

Yoon, P. and Starks, L. 1995, 'Signaling, investment opportunities, and dividend announcements', *Review of Financial Studies*, vol. 8, 995-1018.