

The Impact of Dividend Reduction on Shareholders Wealth – Evidence from Australia

Balasingham Balachandran, Chandra Krishnamurti and Berty Vidanapathirana
(Department of Accounting and Finance, Monash University)

Corresponding Address

Dr Balasingham Balachandran,
Department of Accounting & Finance,
Faculty of Business & Economics,
P.O. Box 197, Caulfield East,
Melbourne,
Victoria, 3145,
Australia.

FAX No. (61) 3 9903 2422
email: Bala.Balachandran@BusEco.Monash.edu.au

The Impact of Dividend Reduction on Shareholders Wealth – Evidence from Australia

Abstract

This study examines the stock price reactions to interim and final dividend reductions in Australia. We find that the market reacts more negatively to interim dividend reductions than final dividend reductions consistent with the view that market participants anticipate deterioration in profitability of firms that eventually announce interim dividend reductions. We find that size of the dividend reduction depends on the riskiness of the firm (idiosyncratic risk), size of the firm prior year profitability and changes in the profitability. We also find that reduce dividend at the interim level rather than delay to final stage depends on the prior year profitability and size of the firm.

Key Words: Price reaction, Australia, Dividend Cuts, Omissions, interim and final.

The Impact of Dividend Reduction on Shareholders Wealth – Evidence from Australia

1.0 Introduction

The idea that changes in dividends convey information has existed for over five decades. Bhattacharya (1979), Ambarish et al. (1987), John and Williams (1985), and Miller and Rock (1985) develop theoretical arguments for dividends as signalling mechanism of future firm value. Consistent with the notion that dividend changes are used as signalling device, empirical researchers have documented positive price reactions when firms increase dividends and negative reactions when they reduce dividends (see for example Aharony and Swary (1980))

Of particular interest to our study is reduction in dividends and their impact on stock prices. Dividend reductions have been studied by Ghosh and Woolridge (1988, 1989), Christie (1994), Sant and Cowan (1994), and others. Several recent papers find support for the interesting finding that dividend reductions are more informative than dividend increases (see for example, Jensen and Johnson (1995), Leftwich and Zmijewski (1991) and Michaely, Thaler and Wormack (1995).

Based on our survey of the literature, we find it interesting to study dividend reductions and their impact on stock prices for these reasons:

1. There are no existing studies in the Australian context on dividend reductions and their impact on stock prices.
2. Australia follows the dividend imputation policy as opposed to the traditional double taxation policy prevalent in countries such as the U.S.

3. Australian firms follow the policy of paying interim and final dividends. This custom is not practiced in countries such the U.S.

Australian firms pay dividend twice a year (interim and final) consistent with UK (see for example Balachandran (2003): the first payment at mid-year referred to as the interim payment and the second and final payment commonly known as the final dividend. Interim payments are much smaller on average than final payments. Balachandran (2003) argue that a dividend reduction at the interim stage would convey to the markets an unavoidable urgency to conserve cash and as a consequence, greater share price reactions would be observed at the interim stage than at the final stage and find support for this hypothesis. As such this paper investigates the impacts on prices of initial interim dividend reductions and initial final reductions for firms that did not reduce their dividends in the previous two-year period in Australia. In this paper, we also categorise dividend reductions into cuts and omissions to examine whether they have different stock price impacts.

The plan of this paper is as follows. Section 2 discusses the research design, while Section 3 presents the empirical results using standard event study methods and cross-sectional regression analysis. Finally, our conclusions are presented in Section 4.

2.0 Research Methods

2.1 Data and Sample Selection

Initial interim and final dividend reduction were identified for Australian companies, where there were no dividend reductions (either interim or final) during two-year period immediately preceding the initial interim and final reductions for the period between January 1995 and December 2006 using the DataStream and IRESS databases. Dividend reduction is defined relative to the previous year's value, i.e. there is a reduction if the interim (final)

dividend per share this year is less than the interim (final) dividend per share paid last year.¹ We find 269 dividend reductions 125 interim dividend reductions (75 cuts and 50 omissions) and 144 final dividend reductions (110 cuts and 34 omissions). We consider only initial dividend reductions since they are likely to elicit a stronger stock price reaction as opposed to subsequent reductions which may be anticipated.

Table 1, Panel A contains the distribution of our sample across the years classified by the following four categories dividend reduction: Interim Cuts, Final Cuts, Interim Omissions, and Final Omissions. We use the same categories in the rest of our analysis. We notice that in general, the number of interim omissions in a given year exceeds the final omissions, while the number of final cuts usually outnumbers the number of interim cuts. Since omissions convey a sense of urgency in conserving future cash flows, there seems to exist a predilection to omit interim dividends in preference to final dividends. On the other hand, cuts occur during periods of milder declines in profitability. In general, the managers, therefore, tend to cut the final rather the interim dividends in order to avoid sending a stronger negative signal.

In Panel B of Table 1, we present our sample broken down by industry classification for each of the four categories of dividend reductions. We find that two of the industry sectors, viz., Materials and Capital Goods account for over 30% of our sample of dividend reductions. Diversified financials, Food, Beverage and Tobacco, Real Estate and Retailing together account for about 29% of the sample. The other 41% is distributed across all other sectors.

2.2 Firm Characteristics of Dividend Reducing Firms

In Table 2 Panel A we show some of the characteristics of our sample categorised on the basis of interim and final dividend reductions. We find that the prior year profitability as

¹ After the adjustment for the capital changes.

measured by $\text{NPAT}/\text{TA}_{t-1}$ is lower for the Interim Reductions as compared to the Final Reductions subsample. The median current period profitability is also significantly lower for firms that reduce interim dividends as compared to final dividend reducing firms. Furthermore, the change in profitability as depicted by $\Delta\text{NPAT}/\text{TA}$ is significantly more negative for interim dividend reducers as compared to final dividend reducers. Taken together, these variables indicate that firms which face lower profitability and steeper declines in profitability tend to prefer reductions in interim dividends rather than postpone the reductions to final stage. Another interesting fact that emerges is that the market value of interim dividend reducers is significantly lower than that of final dividend reducers. The book-to-market ratio at the balance sheet date immediately prior to the year of dividend reduction is higher for interim dividend reducers than that of final dividend reducers. This finding implies that firms with higher growth opportunities (or lower tangible assets) tend to defer their dividend reductions to a future period. Finally, we find that interim dividend reducers have significantly higher idiosyncratic risk as compared to final dividend reducers. These findings denote that smaller and riskier prefer to conserve cash by choosing to go for interim reductions instead of deferring their reductions to the final dividends.

In Panel B of Table 2, we portray the firm characteristics of all four categories of dividend reducers. Our data denote that interim cutters and omitters are smaller than final dividend cutters and omitters as measured by total assets and market value. In general, omitters have lower profitability than cutters with interim omitters performing worse than final omitters. Firms that face the worst declines in profitability choose to omit rather than cut their dividends. Cutters – both interim and final – have lower idiosyncratic risk than omitters. Interim cutters and omitters have higher idiosyncratic risk than final cutters and omitters respectively. Summing up, these findings indicate that omitters face an urgency in

conserving cash due to their lower profitability and tend to be more vulnerable due to their smaller size and higher risk.

2.3. Return generating processes and test statistics

This study employs the market model (MM) to examine the daily abnormal returns around announcement dates. Model parameters were estimated using 200 observations, commencing 260 days prior to the event. The market model was used to estimate the abnormal returns, with an estimation period 260 days prior to the announcement day to 61 days before the announcement day (day -260 to day -61). The market proxy used was the Australian All Ordinaries Share Index, which is a broadly based index comprising approximately the top 300 stocks ranked by market capitalization. This study uses the t-test statistic (standardized residual test statistic) to report the significance levels of the price reaction. The daily returns were measured using logarithm returns after the adjustment for dividends on ex-dates. The abnormal returns for announcement periods were generated for different events windows: - day -2 to day 2 (two days before to two days after the announcement), day -1 to day 1 (the day before to the day after the announcement), and day 0 to day 1. These event windows were used to control for leakages and for "after hours" announcements (which are particularly likely for announcements of bad news).

3.0 Price Reaction to Dividend Reductions

3.1. Announcement effects

In table 3, we report results regarding the stock price reaction to dividend reductions of Australian firms. We report mean and median abnormal returns and the standard residual t-tests (SRT) employing the market model for dividend reduction for the periods; the two day before the announcement date to two day after (day-2 to day +2); the day before the announcement date to day after (day-1 to day +1); the day before the announcement date (day

0 to day 1). Panel A represents price reaction to dividend reductions for all as well as interim and final dividend reductions. Panel B represents price reaction to interim cuts and final cuts. Panel C represents price reaction to interim omissions and final omissions.

The results from Panel A of Table 3 indicate that the 5-day mean CAR surrounding the announcement of all reductions is a statistically significant -3.36%. Interim dividends evoke a much stronger negative response of -4.75% as compared to -2.15% for final dividend reductions. Both results are statistically significant at the 1% level. Results reported for other event windows to (-1, +1), (0,+1) provide similar results.

Interim dividend reductions are seen as bad news while final dividend reductions are viewed less negatively. This implies that the market is able to infer deteriorating performance of firms that subsequently reduce interim dividends. In the case of firms that reduce final dividends, the market holds a more benign view regarding future prospects.

The results of Panel B show the price reaction to announcement of interim dividends cuts, interim dividend omissions, final dividends cuts and final dividend omissions. Omissions evoke much stronger negative response as compared to cuts. The 5-day surrounding announcement (-2,+2) averages -7.05% for interim omissions as compared to -3.21% for interim cuts. Similar results are found for (-1,+1) and (0,+1) windows. Similarly for final omissions we observe stronger negative reaction as compared to final dividend cuts. Our results are consistent with the view that omissions indicate steeper deterioration in a firm's future prospects while cuts follow moderate declines in a firm's profitability.

The 5-day (-2,+2 window) shows that interim omissions are accompanied by a strong reaction (-7.05%) compared to (-3.28%) for final omissions. Results are robust to alternate window specifications such as (0,+1) and (-1,+1). The results are consistent with the view that interim omissions convey more bad news as compared to final omissions. Price reaction

results also indicate that market views interim dividend cuts as more negative compared to final dividend cuts. Results are robust to alternate windows.

3.2 Cross sectional Analysis

A regression model is used to test the sensitivity of the results reported in section 3.1 after controlling the variables that may influence the price reaction. The dependent variable is the abnormal return from day -1 to day 1. The set of explanatory variables and their anticipated signs (in parenthesis) are outlined below.

- DRED (-) is the percentage reduction in dividend (both interim and final).
- DIOF (+) equals 1 if the firm reduces its dividend at the interim level and zero if the firm reduces the dividend at the final level. The rationale for the inclusion of this explanatory variable derives from the hypothesis that interim dividend reduction has strong information content.
- PRECAR (-) is the cumulative abnormal return from day -60 to day -3. If the market anticipates a reduction, it will start bidding down prices prior to the announcement. The greater the bidding down prior to the announcement, the lesser the magnitude of the price reaction on the announcement date. There is also a possibility of leakage of information.
- LMV (+) is the natural logarithm of the market value one calendar month prior to the dividend reduction. Eddy and Seifert (1988), Haw and Kim (1991) and Marsh (1993) find a negative relationship between company size and the extent of market reactions around the dividend announcement date.
- BM_{t-1} is the ratio of book value of total assets to market value of total assets. This is a control variable and is used as a proxy for the extent and quality of investment/growth opportunities.

Table 4 contains the results. The dividend reduction (DRED) variable has the expected sign and is statistically significant in all models. The dummy variable DIOF has the expected sign and is statistically significant at the 5% level. It is consistent with the hypothesis that an interim dividend reduction provides a greater “shock” (Interim shock effect). The coefficient of BM_{t-1} is not significant. PRECAR is negative and statistically significant as expected indicating that prior anticipation of bad news attenuates the price response at the announcement of dividend reductions. LMV and Gearing ratio $_{t-1}$ are not statistically significant.

Summing up, the market reacts more negatively to dividend reductions when the percentage of cuts is larger, when interim rather than final dividends are reduced, and when reductions are anticipated (or leaked) prior to the actual announcements.

4.0 Determinants of the level (percentage) of dividend reduction

We conduct Tobit regressions using the percentage of dividend reduction as the dependent variable. The results are portrayed in Table 5. In Panel A, we display results for the full sample. As expected previous year’s profitability as measured by $NPAT/TA_{t-1}$ has a negative coefficient, indicating that firms with lower prior year profitability tend to cut dividends more other things being equal. The decline in current year profitability as compared to previous year, $\Delta NPAT/TA$ also has a negative sign indicating that firms facing a steeper decline in profitability tend to make deeper cuts in dividends. Idiosyncratic risk has a positive and highly significant coefficient in the Tobit regressions. Firms with high idiosyncratic risk tend to make steeper cuts in dividends other things being equal. Finally the coefficient of LMV (logarithm of the market value of the firm) is negative denoting that large firms tend to make less steeper cuts in dividends as compared to smaller firms *ceteris paribus*.

In Panel B of Table 5, we show the results for the sub-sample of interim dividend reductions. As in the case of full sample $NPAT/TA_{t-1}$ has a negative coefficient, indicating

that firms with lower prior year profitability tend to cut dividends more other things being equal. $\Delta\text{NPAT}/\text{TA}$ is negative and significant but only at the 10% level. Idiosyncratic risk has a positive and highly significant coefficient in the Tobit regressions. But the coefficient is smaller compared to the full sample. Finally the coefficient of LMV (logarithm of the market value of the firm) is not significant. In Panel C, we show the results for firms that reduce final dividends. In general, the coefficients tend to larger in magnitude as compared to the interim dividend sub-sample.

Summing up, prior year profitability and decline in current year profitability are the major determinants of the level of dividend reductions affirming the importance of profitability in dividend reduction decisions. Firms with higher risk and lower market capitalisation tend to cut dividends more steeply, implying that they are most vulnerable to downturns. Cutting dividends somewhat steeply is likely to conserve their cash position and seems to be the preferred decision by managers.

5.0 Decision to reduce dividend at the interim level than final

We next look at the determinants of the decision to cut the interim dividends versus final dividends. Interim dividends will be cut when the firm is in dire straits. The decision to hasten the cuts and reduce the interim dividends is more likely for financially vulnerable firms. Clearly prior year profitability should be one of the major determinants. When the profitability has only declined mildly, managers tend to cut final rather than interim dividends. The size of the firm is expected to also have a bearing on the decision. Small firms are financially more vulnerable and when faced with profitability declines are more likely to reduce interim rather than final dividends to conserve cash. In order to test these conjectures, we conduct probit regressions and report the results in Table 6. Our conjectures regarding prior year profitability and size of the firm is supported in the probit regression

results reported in table 6 with statistically significantly negative coefficients for both firm size and prior year profitability. We also use the book-to-market ratio (B/M_{t-1}) computed as of the prior year in our regressions. B/M_{t-1} denotes growth/investment opportunities. Firms with low B/M_{t-1} have high growth opportunities. It appears, from the regression, that B/M_{t-1} plays no significant role in the decision to cut Interim as opposed to Final dividends.

6.0 Conclusion

In this paper we examine the stock price reaction to dividend reductions of Australian firms during the period 1995-2006. Dividend reductions are associated with negative stock price reaction. The reaction is stronger for omissions as compared to cuts. This is because firms cut dividends in response to moderate declines in profitability as opposed to omissions which are motivated by significant declines in future prospects. Interim reductions produce stronger negative abnormal returns as compared to final dividend reductions. We believe that firms cut or omit interim dividends only when they are in dire straits. The immediacy of the dividend reductions is probably responsible for the stronger market reaction. Our study reinforces the view that interim dividend reductions contain a strong signalling element.

We find that size of the dividend reduction depends on the riskiness of the firm (idiosyncratic risk), size of the firm prior year profitability and changes in the profitability. We also find that reduce dividend at the interim level rather than delay to final stage depends on the prior year profitability and size of the firm.

Table 1: Sample of Total Dividend Reductions

Panel A - Dividend Reduction Year By Year Analysis						
Year	Interim Cuts	Final Cuts	Interim Omissions	Final Omissions	Total	
1995	3	5	1	0	9	
1996	12	12	1	2	27	
1997	4	7	0	3	14	
1998	3	7	3	1	14	
1999	10	11	5	2	28	
2000	4	14	1	2	21	
2001	10	8	9	9	36	
2002	7	6	6	3	22	
2003	6	10	8	5	29	
2004	2	6	5	2	15	
2005	6	9	5	2	22	
2006	8	15	6	3	32	
Total	75	110	50	34	269	
Panel B : Dividend Reductions industry by industry analysis						
Industry	Interim Cuts	Final Cuts	Interim Omissions	Final Omissions	Total	
					Number	%
Automobiles & Components - 2510	3	5	1	0	9	3.35
Banks - 4010	4	0	1	1	6	2.23
Capital Goods- 2010	5	19	8	3	35	13.01
Commercial Services & Supplies -2020	2	8	4	3	17	6.32
Consumer Durables & Apparel - 2520	4	3	1	3	11	4.09
Consumer Services - 2530	0	3	1	1	5	1.86
Diversified Financials- 4020	5	10	3	1	19	7.06
Energy – 1010	3	2	1	0	6	2.23
Food & Staples Retailing -3010	2	2	0	1	5	1.86
Food Beverage & Tobacco – 3020	4	12	5	3	24	8.92
Health Care Equipment & Services – 3510	1	4	1	1	7	2.60
Insurance -4030	3	2	1	0	6	2.23
Materials- 1510	21	14	8	3	46	17.10
Media -2540	2	5	2	1	10	3.72
Oil & Gas 1010	1	0	0	0	1	0.37
Industrial Conglomerates - 2015	0	0	1	0	1	0.37
Real Estate - 4040	3	7	2	5	17	6.32
Retailing- 2550	6	7	3	2	18	6.69
Software & Services -4510	3	1	1	2	7	2.60
Technology Hardware & Equipment- 4520	2	0	3	1	6	2.23
Telecommunication Services – 5010	0	0	0	1	1	0.37
Transportation -2030	1	3	4	1	9	3.35
Utilities -2040	0	2	0	1	3	1.12
Total	75	110	50	34	269	100.00

Table 2: Some Basic Univariate Tests

This table provides univariate statistics on firm characteristics. Panel A reports univariate statistics on firm characteristics for total sample, interim reductions and final reductions. Panel B reports univariate statistics on firm characteristics for sub-samples of interim cuts, final cuts, interim omissions and final omissions. This table also provides nonparametric Mann Whitney statistics for the difference in median between two sub groups: interim reductions and final reductions, and nonparametric Kruskal-Wallis test statistics for the difference in median values across the four sub groups: interim cuts, final cuts, interim omissions and final omissions.

Panel A – Total sample and Two Way classification: Interim reductions and Final reductions						
		All	Interim Reductions	Final Reductions	MW test	
Total Assets _{t-1}	Mean (\$M)	1511.22	1404.56	1603.81		
	Median (\$M)	105.19	92.44	112.23	1.33	
NPAT _{t-1} /TA _{t-1}	Mean %	6.51	4.93	7.89		
	Median%	5.96	5.03	6.29	1.91*	
NPAT _t /TA _t	Mean %	0.62	-1.33	2.32		
	Median%	3.40	2.41	3.81	2.82***	
NOCF _{t-1} /TA _{t-1}	Mean %	7.73	7.55	7.88		
	Median%	7.59	6.75	7.80	0.43	
NOCF _t /TA _t	Mean %	6.29	5.77	6.74		
	Median%	5.92	6.16	5.70	0.59	
ΔNPAT/TA	Mean %	-5.89	-6.25	-5.58		
	Median%	-2.53	-3.29	-2.15	2.03**	
ΔNOCF/TA	Mean %	-1.44	-1.78	-1.14		
	Median%	-1.40	-1.39	-1.43	0.19	
MV	Mean (\$M)	910.54	682.08	1108.86		
	Median	80.16	54.69	105.18	2.26**	
BM _{t-1}	Mean	0.89	0.92	0.86		
	Median	0.89	0.94	0.85	2.23**	
Idiosyncratic risk	Mean %	2.56	2.73	2.42		
	Median %	2.18	2.44	2.08	2.11**	
Sample Size		269	125	144		
Panel B – Four Way classification: Interim Cuts, Final Cuts, Interim Omissions and Final Omissions						
		Interim Cuts	Final Cuts	Interim Omissions	Final Omissions	KW test
Total Assets _{t-1}	Mean (\$M)	2135.97	1990.71	307.45	352.08	
	Median (\$M)	100.61	134.35	73.01	78.56	7.53*
NPAT /TA _{t-1}	Mean %	7.81	8.24	0.60	6.79	
	Median%	6.39	6.47	3.41	5.33	19.82***
NPAT /TA _t	Mean %	3.22	5.35	-8.15	-7.49	
	Median%	4.28	4.67	-1.88	-1.17	72.61***
NOCF/TA _{t-1}	Mean %	8.02	8.53	6.86	5.76	
	Median%	7.64	8.04	5.07	6.76	4.02
NOCF/TA _t	Mean %	6.53	7.50	4.64	4.27	
	Median%	6.67	6.25	3.83	4.24	8.45**
ΔNPAT/TA	Mean %	-4.59	-2.89	-8.74	-14.28	
	Median%	-2.52	-1.60	-4.36	-7.27	26.46***
ΔNOCF/TA	Mean %	-1.49	-1.04	-2.21	-1.48	
	Median%	-0.68	-1.47	-1.74	-1.38	0.26
MV	Mean (\$M)	1037.02	1402.96	149.66	157.35	
	Median	85.6	124.3	30.04	37.80	23.67***
BM _{t-1}	Mean	0.89	0.82	0.96	1.00	
	Median	0.93	0.82	0.95	0.99	13.64***
Idiosyncratic risk	Mean %	2.38	2.16	3.26	3.24	
	Median %	2.15	1.87	3.03	2.80	43.27***
Sample Size		75	110	50	34	

*Significantly different from zero at 10% level, ** significantly different from zero at 5% level and *** significantly different from zero at 1% level.

Table 3: Price Reaction to Dividend reductions

This table reports mean and median abnormal returns and the standard residual t-tests (SRT) employing the market model for dividend reduction for the periods: the day before the announcement date to day after (day-1 to day +1); the day of the announcement date to day after the announcement date (day 0 to day +1) and the two day before the announcement day to two days after the announcement date (day-2 to day+2). Panel A reports price reaction to all dividend reductions, interim dividend reductions and final dividend reductions. Panel B reports price reaction to interim cuts, interim omissions, final cuts and final omissions. This table also provides parametric t-test statistics for the difference in mean abnormal returns between two sub groups: interim reductions and final reductions, and anova test statistics for the difference in mean abnormal returns across the four sub groups: interim cuts, final cuts, interim omissions and final omissions. *Significantly different from zero at the 10% level, ** significantly different from zero at the 5% level and *** significantly different from zero at the 1% level.

Panel A: Price reaction: interim dividend reductions versus final dividend reductions						
		All	Interim Reductions	Final Reductions	t-test	
Day -1 to day +1	Mean (%)	-3.14	-4.35	-2.08	2.39**	
	Median (%)	-1.37	-1.71	-1.08		
	SRT	(-20.84)***	(-19.43)***	(-10.38)***		
Day 0 to day +1	Mean (%)	-2.76	-4.09	-1.59	2.60***	
	Median (%)	-0.86	-1.35	-0.49		
	SRT	(-17.80)***	(-18.35)***	(-7.23)***		
Day -2 to day +2	Mean (%)	-3.36	-4.75	-2.15	2.41**	
	Median (%)	-1.33	-1.64	-0.82		
	SRT	(-22.58)***	(-20.66)***	(-11.62)***		
Sample Size		269	125	144		

Panel B: Price reaction to Four Way classification: Interim Cuts, Final Cuts, Interim Omissions and Final Omissions						
		Interim Cuts	Interim Omissions	Final Cuts	Final Omissions	Anova test
Day -1 to day +1	Mean (%)	-3.41	-5.77	-1.82	-2.93	3.09**
	Median (%)	-1.53	-3.16	-1.10	-0.73	
	SRT	(-14.05)***	(-13.51)***	(-9.44)***	(-4.39)***	
Day 0 to day +1	Mean (%)	03.21	-5.42	-1.25	-2.70	3.34**
	Median (%)	-0.89	-2.80	-0.59	-0.18	
	SRT	(13.04)***	(-13.04)***	(-6.06)***	(-3.97)***	
Day -2 to day +2	Mean (%)	-3.21	-7.05	-1.80	-3.28	4.14***
	Median (%)	-0.98	-3.96	-0.53	-1.78	
	SRT	(-12.63)***	(-17.20)***	(-10.00)***	(-5.94)***	
Sample Size		75	50	110	34	

Table 4: Analysis of Price Reaction

Table 4 provides cross-sectional results for the dividend reductions firms. The dependent variable is three-day abnormal returns, employing the market model. Independent variables are the percentage dividend reduction (Dred), pre-announcement abnormal returns from day -60 to day -2 (PRECAR), the natural logarithm of the market value (LMV), book to market ratio (BM), gearing ratio (equity to total assets) at the balance sheet date immediately prior to the dividend reduction announcement and dummy variables DIOF. DIOF equals 1 if the firm reduces its dividend at the interim stage and zero if the firm reduces the dividend at the final stage. *Significantly different from zero at the 10% level, ** significantly different from zero at the 5% level and *** significantly different from zero at the 1% level..

Variable	1	2	3	4	5	6	7
C	-0.0113 (-1.95)*	-0.0059 (-0.84)	-0.0064 (-0.95)	0.0061 (0.29)	0.0154 (0.70)	-0.0022 (-0.20)	0.0256 (0.87)
DRED	-0.0360 (-2.53)**	-0.0308 (-2.35)**	-0.0271 (-2.20)**	-0.0315 (-1.99)*	-0.0310 (-1.94)*	-0.0263 (-2.03)**	-0.0315 (-1.95)*
DIOF		-0.0178 (-1.97)*	-0.0194 (-2.09)**	-0.0200 (-2.10)**	-0.0198 (-2.10)**	-0.0193 (-2.09)**	-0.0198 (-2.09)**
PRECAR			-0.0778 (-2.27)**	-0.0801 (-2.30)**	-0.0797 (-2.30)**	-0.0773 (-2.26)**	-0.0811 (-2.33)**
BM _{t-1}					-0.0086 (-0.73)	-0.0052 (-0.42)	-0.0073 (-0.58)
LMV				-0.0022 (-0.73)	-0.0026 (-0.90)		-0.0027 (-0.92)
Gearing ratio _{t-1}							-0.0200 (-0.72)
Adjusted R-Squared	0.0216	0.0304	0.0626	0.0615	0.0593	0.0596	0.0583
F-statistics	6.92	5.20	6.96	5.39	4.38	5.25	3.76
P-value	0.0090	0.0061	0.0002	0.0003	0.0008	0.0004	0.0013
Sample size	269	269	269	269	269	269	269

Table 5: Determinants of dividend reductions

This table provides Tobit regression results. The dependent variable is DRED: percentage of dividend reduction; Independent variables are *IDYRISK*: the idiosyncratic risk measured as the standard error of the market model regression of daily stock returns over the period from day -260 to day -61 for each dividend reduction announcement; *LMV*: the logarithm of the market value of the issuing firm; *NPAT/TA_{t-1}*: net profit after tax to total assets at one year before the dividend reduction announcement date; Δ *NPAT/TA*: changes in net profit after tax to total assets, *BM*: book to market ratio. Panel A reports the full sample results. Panel B the results for interim dividend reductions. Panel C the results for final dividend reductions.

	Panel A: Full Sample			Panel B: Interim Dividend Reductions			Panel C: Final dividend Reductions		
Constant	0.5919 (6.36) ^{***}	0.5771 (8.50) ^{***}	0.3107 (6.81) ^{***}	0.6032 (4.45) ^{***}	0.6158 (5.90) ^{**}	0.4130 (6.92) ^{***}	0.6034 (5.08) ^{***}	0.5225 (5.74) ^{***}	0.2383 (3.41) ^{***}
NPAT/TA _{t-1}	-0.8608 (-3.99) ^{***}	-0.8489 (-4.25) ^{***}		-0.8481 (-3.68) ^{***}	-0.8522 (-3.71) ^{***}		-1.2133 (-2.92) ^{***}	-1.0415 (-3.18) ^{***}	
Δ NPAT/ TA	-0.5526 (-3.21) ^{***}	-0.5544 (-3.22) ^{***}		-0.6013 (-3.06) ^{***}	-0.6000 (-3.05) ^{***}		-0.4386 (-2.19) ^{**}	-0.4590 (-2.26) ^{**}	
Idiosyncratic Risk	6.9881 (5.49) ^{***}	6.9515 (5.50) ^{***}	9.6258 (5.76) ^{***}	5.3134 (3.89) ^{***}	5.3823 (3.01) ^{***}	8.0187 (4.26) ^{***}	9.6035 (5.18) ^{***}	9.1493 (5.22) ^{***}	10.4854 (3.67) ^{***}
LMV	-0.0389 (-4.06) ^{***}	-0.0384 (-4.15) ^{***}		-0.0299 (-1.86) [*]	-0.0303 (-1.95) [*]		-0.04324 (-3.84) ^{***}	-0.0398 (-3.46) ^{***}	
BM	-0.0134 (-0.22)			0.0137 (0.16)			-0.0693 (-0.85)		
Adjusted R-Squared	0.2986	0.3011	0.1736	0.2179	0.2243	0.1190	0.3293	0.3293	0.2023
Log likelihood ratio	-44.26	-44.29	-68.44	-24.42	-24.44	-34.40	-15.43	-15.43	-28.92
N	269	269	269	125	125	125	144	144	144

Significantly different from zero at the 10% level, ** significantly different from zero at the 5% level, and ***significantly different from zero at the 1% level.

Table 6: Decision to reduce dividend at the interim rather than at final stage

This table provides probit regression results. The dependent variable is the dummy variable DIOF where reduction in interim dividend is equal to one and zero otherwise. Independent variables are LMV_{t-1} : the logarithm of the market value of the issuing firm at the balance sheet date immediate before the financial year of the dividend reduction; BM_{t-1} : book to market ratio at the balance sheet date immediately before the financial year of the dividend reduction; and $NPAT/TA_{t-1}$ is the net profit after tax to total assets at the balance sheet date immediate before the financial year of the dividend reduction.

	1	2	3	4	5	6	7	8
Constant	0.0459 (0.49)	-0.0838 (-1.09)	-0.0965 (-1.19)	0.3199 (1.61)	-0.3291 (-1.54)	0.4895 (1.30)	0.0315 (0.34)	0.4049 (1.95)
$NPAT/TA_{t-1}$	-2.02 (-2.37)**					-2.4000 (-2.49)**	-2.4243 (-2.62)***	-2.2990 (-2.48)**
$NPAT/TA_t$		-0.8600 (-1.22)						
$\Delta NPAT/TA$			-0.1339 (-0.30)			-0.5579 (-0.84)	-0.6710 (-1.03)	-0.5685 (-0.86)
LMV_{t-1}				-0.0896 (-2.23)**		-0.0864 (-1.96)**		-0.0822 (-2.03)**
BM_{t-1}					0.2695 (1.19)	-0.0646 (-0.27)		
McFadden R-squared	0.0152	0.0091	0.0002	0.0137	0.0045	0.0320	0.0205	0.0318
LR statistic	5.65	3.38	0.10	5.10	1.66	11.88	7.61	11.81
Probability (LR stat)	0.0174	0.0662	0.76	0.0240	0.1971	0.0183	0.0223	0.0081
N	269	269	269	269	269	269	269	269

* Significantly different from zero at the 10% level, ** significantly different from zero at the 5% level, and ***significantly different from zero at the 1% level.

REFERENCES

- Aharony J, and Swary I (1980) Quarterly Dividend and Earnings Announcements and Stockholders' Returns: An Empirical Analysis, *Journal of Finance*, 35, 1-12.
- Ambarish R, John K and Williams J (1987) Efficient Signalling with Dividends and Investments, *Journal of Finance*, 42, 321-343.
- Balachandran, B., UK Interim and Final Dividend Reductions: – A Note on Price Reaction, *European Journal of Finance* 9, 379-390.
- Balachandran B, Cadle J and Theobald M (1996) Interim Dividend Cuts and Omissions in the UK, *European Financial Management*, 2, 23-38.
- Balachandran B, Cadle J and Theobald M (1999) Analysis of Price Reactions to Interim Dividend Reductions – a Note, *Applied Financial Economics*, 9, 305-314.
- Benartzi, S., Michaely, R. and Thaler, R. (1997). “Do changes in dividends signal the future or the past?”, *Journal of Finance*, 52, 1007-1034.
- Bhattacharya S (1979) Imperfect Information, Dividend Policy and The Bird in the Hand Fallacy, *Bell Journal of Economics*, 10, 259-270.
- Bhattacharya S (1980) Non-dissipative Signalling Structures and Dividend Policy, *Quarterly Journal of Economics*, 95, 1-24.
- Christie W (1994) Are Dividend Omissions Truly the Cruellest Cut of All?, *Journal of Financial and Quantitative Analysis*, 29, 459-480.
- De Angelo H and De Angelo L (1990) Dividend Policy and Financial Distress: An Empirical Investigation of Troubled NYSE Firms, *Journal of Finance*, 45, 1415-1431.
- De Angelo H, De Angelo L. and Skinner D J (1992) Dividends and losses, *Journal of Finance*, 47, 1837-1863.
- Ghosh C and Woolridge J R (1988) An Analysis of Shareholder Reaction to Dividend Cuts and Omissions, *Journal of Financial Research*, 9, 281-294.
- Ghosh C and Woolridge J R (1989) Stock Market Reaction to Growth Induced Dividend Cuts: Are Investors Myopic?, *Managerial and Decision Economics*, 10, 25-35.
- Healy P M and Palepu K G (1988) Earnings Information Conveyed by Dividend Initiations and Omissions, *Journal of Financial Economics*, 21, 149-175.
- Jensen G R and Johnson J M (1995) The Dynamics of Corporate Dividend Reductions, *Financial Management*, 24, 31-51.
- John K and William J (1985) Dividends, Dilution and Taxes: A Signalling Equilibrium, *Journal of Finance*, 40, 1053-1070.
- Leftwich R and Zmijewski M E (1994) Contemporaneous Announcements of Dividends and Earnings, *Journal of Accounting Auditing and Finance*, 9, 725-762.
- Michaely R, Thaler R H and Womack K L (1995) Price Reactions to Dividend Initiations and Omissions: Overreaction or Drift?, *Journal of Finance*, 50, 573-608.
- Miller M H and Rock K (1985) Dividend Policy Under Asymmetric Information”, *Journal of Finance*, 40, 1031-1051.
- Sant R and Cowan A (1994) Do Dividends Signal Earnings? The Case of Omitted Dividends, *Journal of Banking and Finance*, 18, 1113-1133.