

DIVIDEND POLICY AND THE LIFE CYCLE HYPOTHESIS: EVIDENCE FROM TAIWAN

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ABSTRACT

This paper examines the dividend policy for firms listed on the Taiwan Stock Exchange and test the life cycle hypothesis. The sample involves 6031 observations of dividend payments over the 16-year period 1992-2007. Consistent with the prediction of the life cycle hypothesis, the results indicate that dividend payers (cash dividends, stock dividends, or both) are associated with higher profitability, higher asset growth rate, and higher market-to-book ratio than non-payers (none dividends). The median return on assets (ROA) is 7.03% for dividend payers and -0.93% for non-payers. Similarly, the median market-to-book ratio is 1.69 for dividend payers as opposed to 0.80 for non-payers. Moreover, the results indicate that stock-dividend payers are associated with higher asset growth rate, but lower ratio of retained earnings to total equity than those for cash-dividend payers. In particular, stock-dividend payers are associated with higher asset growth rate and lower return on assets, lower retained to total equity ratio than those for cash-dividend payers. These results are consistent with the life cycle hypothesis of dividend payment in that younger firms with higher growth potential but lower profitability tend to distribute more stock dividends than cash dividends. When firms become more mature as characterized by lower growth potential but higher profitability tend to distribute more cash dividends as opposed to stock dividends.

JEL: G32; G35

KEYWORDS: dividend policy, cash dividend, stock dividend, life cycle hypothesis

INTRODUCTION

Ever since Miller and Modigliani (1961) published their pioneering article on dividend policy, numerous theoretic and empirical studies have examined this important issue. Empirical evidence suggests that a firm's dividend policy may depend on the stage of the firm's life cycle. For example, younger firms with higher growth opportunities but lower profitability may distribute less cash dividends. In contrast, mature firms with higher profitability but lower growth opportunities may distribute more cash dividends. The past two decades have witnessed drastic changes in dividend policy among industrial firms. Fama and French (2001) report a significant decline in the proportion of United States industrial firms that pay cash dividends in the period 1978-99. They note that such changes in dividend policy are related to changing characteristics of these publicly traded firms. DeAngelo et al. (2006) propose that changes in dividend policy of publicly traded industrial firms in the United States are consistent with the prediction of the life cycle hypothesis.

The purpose of this paper is to examine dividend policy for industrial firms listed on the Taiwan Stock Exchange over the period 1992-2007. In particular, we examine whether the dividend policy of Taiwan's industrial firms are consistent with the prediction of the life cycle hypothesis. We first examine the pattern of dividend payments for industrial firms listed on the Taiwan Stock Exchange over the sample period. That is, we examine if there is any change in the proportion between dividend payers and non-payers? Moreover, since both stock dividends and cash dividends are quite common for firms listed on the Taiwan Stock Exchange, we examine whether dividend payers change their choice between stock dividends and cash dividends in the sample period. Finally, we examine whether the choice between stock dividends and cash dividends is consistent with the prediction of the life cycle hypothesis.

Unlike the United States firms which distributed mainly cash dividends in the past two decades, industrial firms listed on the Taiwan Stock Exchange declared more stock dividends than cash dividends especially in the early years of 1990s. Moreover, stock dividends appear to be more common than cash dividends for firms in the high growth industries such as the electronic industry. One plausible explanation for the pattern of more stock dividends than cash dividends is that these firms may be in their youth stage of life cycle as characterized by higher growth opportunity. However, the latter part of the sample period has witnessed a drastic shift from stock dividends to cash dividends for these firms. In addition, the proportion of non-payers has also increased. This change in the dividend policy may be due to the situation that these firms were moving toward a more mature stage of life cycle as characterized by lower growth opportunity.

To test the validity of the life cycle hypothesis of dividend policy, we examine whether the shift in the choice from stock dividends to cash dividends is related to the changing characteristics of listed stocks. Alternatively, the shift in dividend policy could be due to the changing propensity of listed stocks to pay dividends (e.g., Fama and French, 2001). Thus, we examine whether firms that distribute cash dividends are characterized by lower growth opportunity, higher profitability, and large size as compared to those that distribute stock dividends. Following DeAngelo et al., 2006, we also examine whether the earned/contributed capital mix provides a better explanation of the observed dividend changes.

Our data involve 6031 sample observations from stocks listed on the Taiwan Stock Exchange, ranging from 149 industrial firms in 1992 to 619 industrial firms in 2007. Over the sample period 1992-2007, we observe a drastic increase in the proportion of dividend non-payers. Moreover, among dividend payers, we observe a drastic shift from stock dividends to cash dividends. The proportion of dividend non-payers increases from 10.8% in the first half of the sample period to 28.7% in the second half of the sample period. Moreover, for dividend payers, the proportion of firms paying stock dividends decreases from 59.5% in the first half of sample period to 10.6% in the second half of the sample period. In contrast, the corresponding ratio increases from 4.4% to 20.0% for cash dividends. When dividend payments are measured in terms of dollar amount, the results are comparable. The average stock dividend per share decreases by 61% from (New Taiwan Dollar) NT\$ 1.30 in the first half of the sample period to NT\$ 0.51 in the second half of the sample period. In contrast, the cash dividend per share increases by 172% from NT\$ 0.25 to NT\$ 0.68 per share.

The results also indicate that dividend payers (cash dividends, stock dividends, or both) are associated with higher profitability, higher asset growth rate, and higher market-to-book ratio than non-payers (none dividends). The median return on total assets (ROA) is 7.03% for dividend payers and -0.93% for non-payers. Similarly, the median market-to-book ratio is 1.69 for dividend payers as opposed to 0.80 for non-payers. Moreover, the results indicate that stock-dividend payers are associated with higher asset growth rate, but lower profitability as measured by return on total assets as well as lower retained earnings to total equity ratio than cash-dividend payers. These results are consistent with the prediction of the life cycle hypothesis in that younger firms with higher growth potential but lower profitability tend to distribute more stock dividends than cash dividends. When firms become more mature as characterized by lower growth potential but higher profitability tend to distribute more cash dividends as opposed to stock dividends.

Previous research from the United States financial market documents a declining pattern of cash dividends (e.g., Fama and French, 2001). In contrast, our empirical evidence indicates an increasing trend of cash dividends but a declining trend for stock dividends in the sample period 1992-2007. Despite the difference in empirical evidence between our empirical results and those derived from the United States financial market, we argue that the pattern of increasing cash dividends and declining stock dividends in the Taiwan stock market is consistent with the prediction of the life cycle hypothesis as suggested in DeAngelo et al. (2006), among others. Moreover, our results indicate that the distribution of stock dividends and/or cash dividends appears to be affected by the long-term profitability as measured by the ratio of retained earnings to total equity, aside from other factors such as the growth opportunity as measured by the asset growth rate ($\Delta TA/TA$) and the short-term profitability as measured by the return

on total assets (ROA). The plan of this paper is as follow. Section 2 provides a review of relevant literature. Section 3 describes data and methodology. Section 4 reports empirical results. Section 5 concludes this paper.

LITERATURE REVIEW

Miller and Modigliani (1961) argue that, in a frictionless market, dividend payout policy is irrelevant and that investment policy alone is the only determinant of firm value. In this perfect world, firm value is determined by the net present value of cash flows generated by the investment opportunity unique to a firm. To keep the investment opportunity fixed, Miller and Modigliani (1961) assume a 100% distribution of free cash flow to shareholders in every time period. When the assumptions are relaxed to allow retention, DeAngelo and DeAngelo (2006) argue that dividend payout policy matters in exactly the same way as investment policy does. They suggest that the maximization of firm value requires the payout policy to be optimized.

In the real world, financial managers appear to consider dividend policy as a relevant decision. In a survey of 384 financial executives, Brav et al. (2005) report that eighty percent of the financial executives believe that dividend payout policy conveys information to market participants. Moreover, financial managers appear to make the dividend policy in a conservative way. The survey indicates that maintaining the dividend level is of equal importance as investment decisions. For example, 94% of dividend payers strongly agree that they try to avoid reducing dividends. And more than two-thirds of dividend payers state that the stability of future earnings is an important factor affecting dividend payout decisions. For firms that pay no dividends, the financial executives argue that dividend inflexibility make them hesitate to pay cash dividends.

The relevance of dividend policy in the real world can be seen from the changing pattern of dividend payments in the past decades. Fama and French (2001) report a drastic decline in the proportion of United States industrial firms that pay cash dividends in the period 1978-99. They note that both changing firm characteristics and low propensity to pay cash dividends are responsible for the declining cash dividends. On the one hand, newly listed firms tend to be smaller with lower profitability and stronger growth opportunity. These characteristics are typical for firms that never paid cash dividends. On the other hand, even after controlling for firm characteristics, firms have become less likely to pay cash dividends across all groups ranked by size, profitability, and growth opportunity.

Fama and French (2001), Grullon et al. (2002), DeAngelo and DeAngelo (2006), DeAngelo et al. (2006), among others, suggest that dividend policy requires a trade-off between the pros and cons of retention versus distribution of corporate earnings. For example, while retention of earnings provides the benefit of floatation cost savings in funding investment needs, distribution of earnings minimize potential agency costs of free cash flow which is under the discretion of incumbent managers.

The trade-off of retention versus distribution is associated with the life cycle of firms. For firms at their younger stages, retention dominates distribution because younger firms are characterized by smaller size, lower profitability and stronger growth opportunity. As a result, a smaller portion of earnings is more likely to be distributed. For these firms, the benefit of retention outweighs the cost of distribution. In contrast, more mature and established firms are more likely to distribute earnings to shareholders. These firms are characterized by lower investment opportunity, high profitability, and larger firm size. Hence, the cost of retaining earnings (e.g., the agency costs derived from free cash flow) tend to more than offset the benefit of floating cost saving.

Although the life cycle of firms tends to be characterized by investment opportunity, profitability and firm size, DeAngelo et al. (2006) suggest that the earned/contributed capital mix (i.e., the ratio of retained earnings to total equity) provides a better measure of a firm's life cycle that is relevant to the choice of firms' dividend payments. They propose that the ratio of retained earnings to total equity is a better measure of long-term profitability and thus is more relevant to the dividend decision. Their empirical

evidence indicates that the proportion of industrial firms that pay cash dividends is significantly related to the retained/contributed capital mix even after controlling for the impact of other variables such as firm size, profitability, and growth opportunity.

HYPOTHESIS AND METHODOLOGY

The life cycle hypothesis proposes that dividend policy is associated with firms' life cycle. Younger firms with higher growth opportunity but lower profitability tend to retain a larger portion of earnings. For these firms, retention dominates distribution because savings from lower flotation costs more than offset the benefit of lower agency costs from free cash flow. In contrast, mature firms with lower growth opportunity but higher profitability tend to distribute a larger portion of earnings. For these firms, distribution dominates retention since the benefits of distribution (e.g., lower agency costs derived from free cash flow) outweigh the savings of retention (e.g., lower flotation costs).

In particular the life cycle hypothesis would predict higher profitability for dividend payers (stock dividends, cash dividends, or a mix of stock and cash dividends) than for non-payers (none dividends). According to the regulation, the retained earnings must be sufficient to cover the dividend payments in order for firms to distribute dividends (cash dividends or stock dividends). Since retained earnings reflect the long-term profitability in the past years, a firm with poor long-term profitability is unable to distribute dividends.

Moreover, the life cycle hypothesis would predict higher growth opportunity but lower profitability for firms that pay stock dividends than for cash dividends. For firms with higher growth opportunity but lower profitability, the demand for capital to implement profitable investment opportunity is higher. Thus, the savings from flotation costs may dominate the agency costs from free cash flow. Therefore, these firms may tend to distribute stock dividends rather than cash dividends. In contrast, for firms with lower growth opportunity but higher profitability, the agency costs from free cash flow may outweigh the costs of floating new security. Thus, these firms prefer to distribute cash dividends rather than stock dividends.

Data and the Summary Statistics of Dividend Payments

The sample includes all non-financial firms listed on the Taiwan Stock Exchange over the 16 years from 1992 to 2007. The sample period is selected in view of the availability of data. The first year is chosen since a relatively smaller number of stocks were listed on the Taiwan Stock Exchange prior to that year. The last year is selected since the financial data are made available only until recently. Following previous research (e.g., Fama and French (2001), DeAngelo et al. (2006)), we exclude financial firms because these firms operate in a highly regulated environment. Moreover, to be included in the sample, a firm must have non-missing values on dividends and earnings in the financial database provided by the data vendor (i.e., the Taiwan Economic Journal). The values of cash dividends, stock dividends and other financial variables are collected for each sample firm. The screening procedure results in sample firms ranging from 149 firms in 1992 to 619 firms in 2007 with a total of 6031 sample observations of dividend payments.

METHODOLOGY

We first examine whether the pattern of different types of dividend payments among sample firms has changed over the sample period. Sample firms are first classified into dividend payers and non-payers. Thus, our first objective is to examine whether the proportion of dividend payers and non-payers changes over the sample period. For dividend payers, firms may distribute stock dividends only, cash dividends only, or distribute a mix of both stock dividends and cash dividends. Thus, for dividend payers, we examine whether the proportion of stock dividends, cash dividends, and the mix of stock dividends and cash dividends changes in the sample period.

We then examine whether firms' dividend policy is consistent with the prediction of the life cycle hypothesis. Firm characteristics are measured via profitability, growth opportunity, and firm size (e.g., Fama and French, 2001). We first examine firm characteristics between dividend payers and non-payers. According to the life cycle hypothesis, dividend payers should be more profitable than non-payers. Moreover, we examine firm characteristics among firms that distribute stock dividends and cash dividends. According to the life cycle hypothesis, firms distribute stock dividends should be characterized by higher growth opportunity but lower profitability.

Fama and French (2001) note that changing pattern of dividend payments can be due to two potential sources. On the one hand, characteristics of newly listed firms may differ from those originally listed on the stock exchange. Fama and French (2001) examine the United States industrial firms and suggest that newly listed firms tend to be smaller with low profitability and strong growth opportunities, which provides a partial explanation for the finding of declining cash dividends observed in the United States market. On the other hand, characteristics of originally listed firms may change as time progresses over the sample period. For example, Fama and French (2001) document a lower propensity of firms to pay cash dividends after controlling for the impact of other firm characteristics.

Following Fama and French (2001), we examine whether characteristics of newly listed firms differ from those originally listed on the Taiwan Stock Exchange. For convenience, we define newly listed stocks as sample firms listed on the Taiwan Stock Exchange within the sample period 1992-2007. In contrast, firms listed on the Taiwan Stock Exchange prior to 1992 are referred to as the originally listed stocks. We then examine whether firm characteristics of newly listed firms differ from those of the originally listed firms. This allows us to examine whether any potential changes in dividend policy are contributed by newly listed firms.

Moreover, we examine the propensity of originally listed firms to pay cash/stock dividends over the sample period. This allows us to examine whether originally listed firms also change their dividend policy. If so, we examine whether the propensity of originally listed stocks to pay dividends is associated with changing firm characteristics including profitability, growth opportunity, and firm size.

Aside from firm characteristics such as profitability, growth opportunity, and firm size, DeAngelo et al. (2006) document a highly significant relation between the decision to pay dividend and the earned/contributed capital mix after controlling for the impact of profitability, growth, and firm size. The rationale is that the ratio of retained earnings to total equity provides a long-term measure of profitability, which is likely an important factor in affecting a firm's dividend policy. To examine this possibility, we also examine whether the ratio of retained earnings to total equity represents a better measure of a firm's life cycle in affecting the dividend decision.

EMPIRICAL RESULTS

Table 1 and Figure 1 report the distribution of four types of dividend payers over the sample period 1992-2007. Over the whole sample period, the results indicate that 74.9% of the 6031 sample observations belong to dividend payers with the remaining 25.1% belong to non-payers. Of the 74.9% observations with dividend payments, stock dividends account for 20.4%, cash dividends 16.9%, and those involving a mix of both stock and cash dividends account for 37.6%.

When the whole sample period is divided into two sub-periods where 1992-1997 is the first sub-period and 1998-2007 is the second sub-period. The results indicate a drastic change in the proportion of the four types of dividend payments as time progresses in the sample period. In particular, the proportion of sample firms that pay stock dividends decreases drastically from 59.5% in the first sub-period of 1992-97 to 10.6% in the second sub-period of 1998-2007. In comparison, the proportion of sample firms that pay cash dividends increases from 4.4% in the first sub-period to 20.0% in the second sub-period. Similarly, the proportion of sample firms paying a mix of cash and stock dividends increases from 25.3% in the first sub-period to 40.7% in the second sub-period. Finally, the proportion for non-payers increases from

10.8% in the first sub-period to 28.7% in the second sub-period. Figure 1 plots the trend for the four types of dividend payers. The figure indicates a rising trend for the proportion of cash-dividend payers, mixed payers, and non-payers, but a downward trend for the stock-dividend payers in the sample period.

Table 1: The Distribution of the Four Types of Dividend Payers over the Sample Period 1992-2007

Year	All samples		Stock dividends		Both dividends		Cash dividends		None dividends	
	N	n	%	n	%	n	%	n	%	
	(1)	(2)	(2)/(1)	(3)	(3)/(1)	(4)	(4)/(1)	(5)	(5)/(1)	
1992	149	70	47.0	44	29.5	10	6.7	25	16.8	
1993	146	86	58.9	48	32.9	9	6.2	3	2.1	
1994	190	108	56.8	57	30.0	6	3.2	19	10.0	
1995	218	109	50.0	67	30.7	12	5.5	30	13.8	
1996	242	157	64.9	49	20.2	7	2.9	29	12.0	
1997	267	191	71.5	42	15.7	9	3.4	25	9.4	
1998	282	123	43.6	78	27.7	14	5.0	67	23.8	
1999	322	109	33.9	102	31.7	19	5.9	92	28.6	
2000	371	65	17.5	132	35.6	44	11.9	130	35.0	
2001	432	53	12.3	130	30.1	73	16.9	176	40.7	
2002	509	41	8.1	197	38.7	98	19.3	173	34.0	
2003	537	41	7.6	246	45.8	99	18.4	151	28.1	
2004	576	26	4.5	279	48.4	117	20.3	154	26.7	
2005	580	21	3.6	250	43.1	143	24.7	166	28.6	
2006	591	11	1.9	255	43.1	174	29.4	151	25.5	
2007	619	20	3.2	290	46.8	184	29.7	125	20.2	
1992-1997	1212	721	59.5	307	25.3	53	4.4	131	10.8	
1998-2007	4819	510	10.6	1959	40.7	965	20.0	1385	28.7	
1992-2007	6031	1231	20.4	2266	37.6	1018	16.9	1516	25.1	

This table reports the distribution of four types of dividend-paying samples (stock dividends only, both stock and cash dividends, cash dividends only, none dividends) over the sample period 1992-2007.

Alternatively, we may estimate the dollar amount of cash dividends and stock dividends from the three types of dividend payers (cash dividends only, stock dividends only, and a mix of both cash and stock dividends). The dollar amount of stock dividends is estimated by multiplying the number of shares declared as stock dividends by the par value per share, which is NT\$10. Similarly, for sample firms paying a mix of both cash and stock dividends, the dollar amount of stock dividends is estimated in a similar way. The distribution of stock dividends requires a decrease in either the additional paid-in capital or the retained earnings or both. Similarly, the declaration of cash dividend requires a decrease in retained earnings. Thus, we estimate the dollar amount of stock dividends from the perspective of how much retained earnings and/or additional paid-in capital is removed to the capital account. These dollar amounts of cash dividends and stock dividends are averaged across sample firms for each year in the sample period.

Figure 1: The Proportion of the Four Types of Dividend Payers-Sample Period 1992-2007

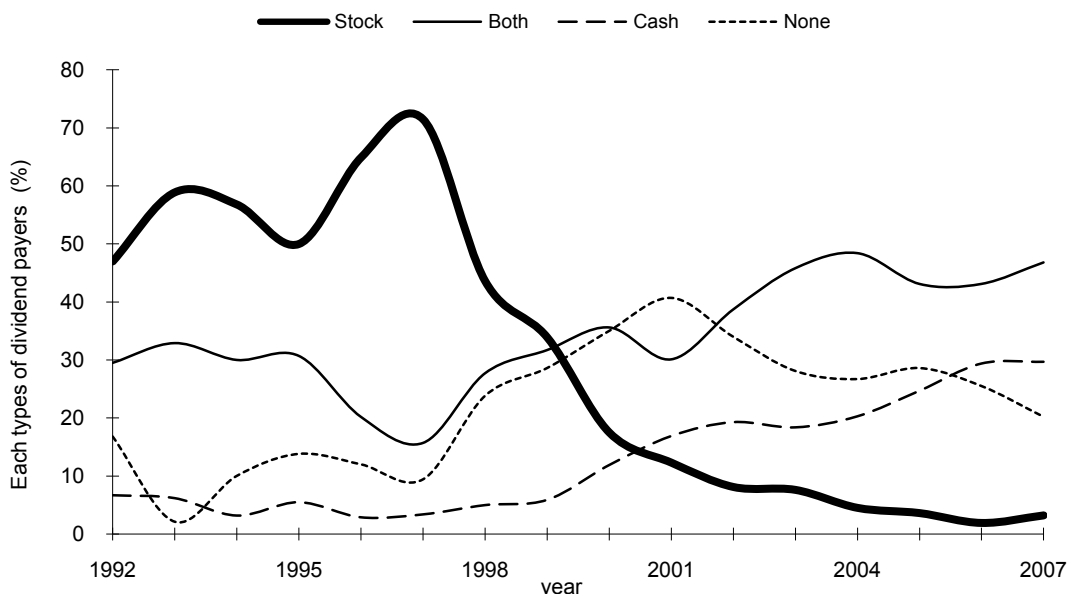


Figure 1 shows the Proportion of the Four Types of Dividend Payers (stock dividends only, cash dividends only, a mix of cash and stock dividends, none dividends) over the Sample Period 1992-2007. The horizon axle is the sample period which extends from 1992 to 2007. The vertical axle reports the proportion of the four types of dividend payers.

Table 2 reports the results for the dollar amount of cash dividends and stock dividends per share of common stock for dividend payers in the sample period. The results indicate that the total dollar amount of dividends per share of common stock, which includes both the cash dividends and the stock dividends, is NT\$1.33 over the whole sample period. Since the par value is NT\$10 per share for all listed stocks on the Taiwan Stock Exchange, the distribution of dividends amounts to 13.3% of par value for dividend payers, of which 5.2% in the form of cash dividends and 8.1% in the form of stock dividends. However, the dollar amount of dividends indicates a declining trend in the whole sample period. The total dollar amount of dividend decreases by 23% from NT\$ 1.55 per share in the first sub-period to NT\$1.19 in the second sub-period. The major decline in the total dollar amount of dividends comes from the significant drop in the dollar amount of stock dividends, which decreases by 61% from NT\$1.30 in the first sub-period to NT\$0.51 in the second sub-period. Moreover, the stock dividends experience a significant decline from both sources of pain-in capital and retained earnings. In contrast, the dollar amount of cash dividends experiences a significant increase of 172% from NT\$0.25 in the first sub-period to NT\$0.68 in the second sub-period. As a result, the proportion of the dollar amount of stock dividends to the dollar amount of total dividends drops from 83.5% in the first sub-period to 45.8% in the second sub-period.

Table 3 reports the aggregate dollar amount of cash dividends and stock dividends per year across all dividend payers. The results indicate the aggregate dollar amount for all dividend payers increases from NT\$116 billion per year in the first sub-period to NT\$463 billion per year in the second sub-period. However, this increase in aggregate dollar amount of dividends is contributed mainly by the increase in the dollar amount of cash dividends. The aggregate dollar amount for cash dividends increases by 13 times from NT\$23.3 billion per year in the first sub-period to NT\$330.4 billion per year in the second sub-period. In contrast, the aggregate dollar amount for stock dividends increases only by 43% from NT\$92.9 billion per year in the first sub-period to NT\$132.6 billion per year in the second sub-period. Thus, consistent with the results in Table 2, the proportion of the aggregate amount for stock dividends to that for total dividends drops significantly from 76.3% in the first sub-period to 38.9% in the second

sub-period. Figure 2 plots the time trend for the proportion of the dollar amount for stock dividends to that for total dividends.

Table 2: The Dollar Amount of Cash Dividends and Stock Dividends per Share over the Sample Period 1992-2007

Year	Cash dividends	Earning dividends	Paid-in capital dividends	Stock dividends	Total dividends	Stock dividend ratio (%)
	(1)	(2)	(3)	(4)=(2)+(3)	(5)=(1)+(4)	(6)=(4)/(5)*100
1992	0.35	0.63	0.43	1.07	1.42	75.38
1993	0.33	0.90	0.49	1.39	1.73	80.69
1994	0.27	0.88	0.43	1.31	1.58	83.19
1995	0.27	0.70	0.41	1.10	1.37	80.44
1996	0.17	0.85	0.47	1.32	1.49	88.79
1997	0.12	1.00	0.59	1.59	1.71	92.70
1998	0.25	0.63	0.33	0.96	1.21	79.40
1999	0.25	0.58	0.29	0.87	1.12	77.52
2000	0.32	0.48	0.15	0.63	0.95	66.70
2001	0.34	0.33	0.10	0.43	0.77	56.03
2002	0.54	0.35	0.07	0.42	0.96	43.66
2003	0.71	0.39	0.07	0.45	1.16	39.02
2004	0.88	0.37	0.06	0.43	1.31	32.76
2005	0.96	0.30	0.03	0.34	1.29	25.94
2006	1.17	0.25	0.03	0.28	1.45	19.12
2007	1.38	0.26	0.03	0.30	1.67	17.62
1992-1997	0.25	0.83	0.47	1.30	1.55	83.53
1998-2007	0.68	0.39	0.12	0.51	1.19	45.78
1992-2007	0.52	0.56	0.25	0.81	1.33	59.93

The table reports the dollar amount (in NT\$) of cash dividends and stock dividends per share over the sample period 1992-2007. The dollar amount of stock dividends is further divided into two sources: paid-in capital and retained earnings. The stock dividend ratio is the proportion of the dollar amount for stock dividends per share to that for the total dividends.

Table 4 reports the median values of firm attributes over the sample period 1992-2007. Columns (3) and (4) of Panel A indicate that sample firms experience higher profitability in the first sub-period than that in the second sub-period. The median return on assets (ROA) decreases from 6.17% in the first sub-period to 4.96% in the second sub-period. Similarly, the return on equity (ROE) drops from 7.99% in the first sub-period to 6.92% in the second sub-period. Moreover, the sample firms experience higher growth rate in the first sub-period than that in the second sub-period. The asset growth rate ($\Delta TA/TA$) is 12.59% in the first sub-period as opposed to 4.72% in the second sub-period. Similarly, the market-to-book ratio of 2.48 in the first sub-period is about twice the ratio of 1.20 in the second sub-period.

Table 3: The Aggregate Dollar Amount of Cash Dividends and Stock Dividends over the Sample Period 1992-2007

Year	Total cash	Total earning	Total paid-in capital	Total stock	Total dividends	Stock dividend ratio (%)
	(1)	(2)	(3)	(4)=(2)+(3)	(5)=(1)+(4)	(6)=(4)/(5)*100
1992	23.12	25.24	15.51	40.76	63.87	63.81
1993	22.30	33.89	19.18	53.07	75.36	70.41
1994	23.64	53.56	19.51	73.07	96.71	75.56
1995	26.89	52.86	23.72	76.58	103.47	74.01
1996	25.28	77.72	40.93	118.66	143.93	82.44
1997	18.60	134.17	60.77	194.94	213.53	91.29
1998	60.34	89.98	46.81	136.79	197.13	69.39
1999	63.89	126.03	55.33	181.36	245.26	73.95
2000	131.11	111.69	31.02	142.71	273.82	52.12
2001	110.54	95.85	25.01	120.86	231.40	52.23
2002	178.01	93.93	21.78	115.71	293.72	39.40
2003	297.61	129.36	20.99	150.35	447.96	33.56
2004	458.22	148.83	19.79	168.62	626.85	26.90
2005	535.06	89.36	13.56	102.92	637.98	16.13
2006	648.59	78.74	15.65	94.39	742.98	12.70
2007	820.38	100.16	12.45	112.61	932.99	12.07
1992-1997	23.30	62.91	29.94	92.85	116.15	76.25
1998-2007	330.38	106.39	26.24	132.63	463.01	38.85
1992-2007	215.22	90.09	27.63	117.71	332.94	52.87

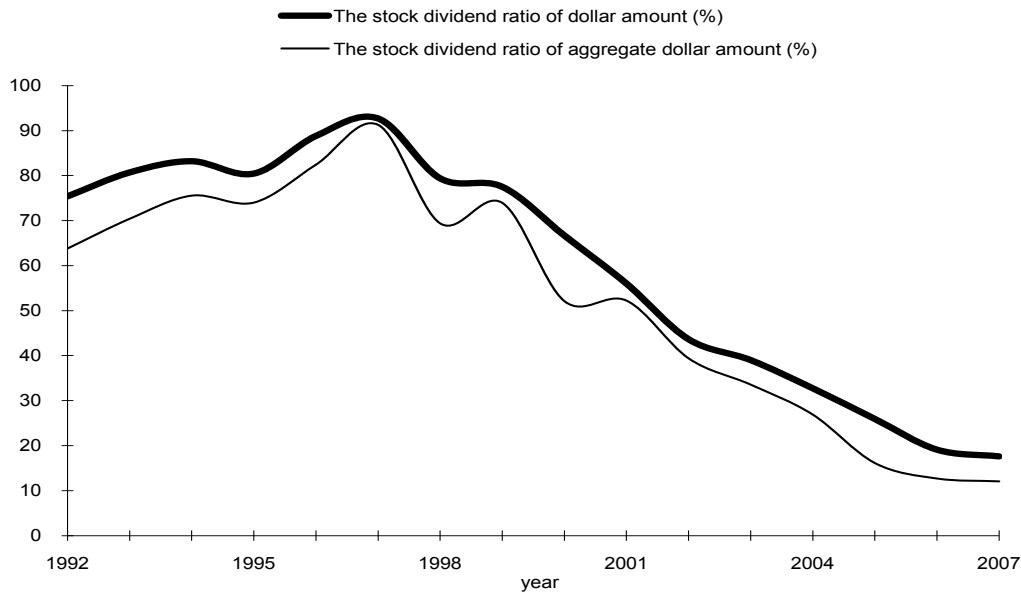
The table reports the aggregate dollar amount (in NT\$ billion) of cash dividends and stock dividends for all payers over the sample period 1992-2007. The stock dividend ratio is the proportion of the aggregate dollar amount for total stock dividends to that for total dividends.

When firm attributes for dividend payers are compared with those for non-payers, Columns (5) and (6) of Panel A indicate that dividend payers are associated with higher profitability, higher asset growth rate, higher market-to-book ratio. For example, the median return on assets (ROA) is 7.03% for dividend payers and -0.93% for non-payers. Similarly, the median market-to-book ratio is 1.69 for dividend payers as opposed to 0.80 for non-payers.

When sample observations are classified into originally-listed firms (firms listed on the stock exchange throughout the whole sample period) and newly-listed firms (firms newly-listed within the sample period), Columns (3) and (4) of Panel B indicate that newly-listed firms are associated with higher profitability, higher growth rate, and slightly higher market-to-book ratio. For example, the median return on equity is 8.98% for the newly-listed firms as opposed to the 5.29% for the originally-listed firms. Similarly, the asset growth rate ($\Delta TA/TA$) is 7.63% for the newly-listed firms as opposed to 4.18% for the originally-listed firms. When sample firms are classified by industry into high-tech versus non-high-tech

industry (i.e., electronic industry), Columns (5) and (6) of Panel B indicate that high-tech firms are associated with higher profitability, higher growth rate, and higher market-to-book ratio.

Figure 2: The Ratio of Stock Dividends to Total Dividends over the Sample Period 1992-2007.



The figure displays the ratio of stock dividends to total dividends over the sample period 1992-2007. The solid curve is derived from Table 2 where the ratio indicates the proportion of the dollar amount for stock dividends per share to that for the total dividends. The dotted curve is derived from Table 3 where the ratio indicates the proportion of the aggregate dollar amount for stock dividends to that for the total dividends.

One plausible explanation for the higher profitability of the newly-listed firms is that these firms tend to be in the high-tech industry. Table 5 reports the breakdown of sample observations classified by both listing time and industry. Column (4) indicates that only 89% (2044 out of 2301 observations) of the originally-listed firms belong to the non-high-tech industry. In comparison, 49% (1831 out of 3730 observations) of the newly-listed firms belong to the high-tech industry. The pattern suggests that firms newly listed on the stock exchange within the sample period tend to be in the high-tech industry than those originally listed firms. Moreover, the fourth row of Table 5 indicates that 82% (3051 out of 3730 observations) of the newly-listed observations enter the stock exchange in the second sub-period.

To examine the difference in firm attributes between dividend payers and non-payers, the following logistic regressions are estimated:

$$Y = \alpha + \beta_1(\log(SIZE)) + \beta_2(ROA) + \beta_3(\Delta TA / TA) \tag{1}$$

$$Y = \alpha + \beta_1(\log(SIZE)) + \beta_2(RE / TE) + \beta_3(ROA) + \beta_4(\Delta TA / TA) \tag{2}$$

The dependent variable (Y) is a dummy variable set to one for dividend payers (including cash dividends only, stock dividends only, and a mix of cash and stock dividends) and zero for non-payers. The explanatory variables include the logarithm of total assets ($\log(SIZE)$), return on assets (ROA), retained earnings to equity ratio (RE/TE), and total assets growth rate ($\Delta TA/TA$). Ordinary Least Squares estimates were obtained. The results are presented in Table 6.

Table 4: Summary Statistics of Firm Attributes over the Sample Period 1992-2007

Panel A					
Variable	Whole Sample	First-sub Period	Second Sub-period	Dividends Payers	Non-Payers
	(1992-2007)	(1992-1997)	(1998-2007)		
(1)	(2)	(3)	(4)	(5)	(6)
Log(SIZE)	9.76	9.70	9.77	9.77	9.72
RE/TE	9.69	11.05	9.20	13.41	-7.60
ROA	5.23	6.17	4.96	7.03	-0.93
ROE	7.16	7.99	6.92	9.87	-3.47
NI/Sales	6.03	6.91	5.54	8.38	-3.67
Δ TA/TA	6.15	12.59	4.72	9.32	-2.77
Δ NI/NI	10.05	10.86	9.86	14.40	-46.27
MTB	1.42	2.48	1.20	1.69	0.80
OBS	6031	1212	4819	4515	1516

Panel B					
	Non-Payers	Originally-Listed Firms	Newly Listed Firms	High-Tech Firms	Non-High-Tech Firms
(1)	(6)	(7)	(8)	(9)	(10)
Log(SIZE)	9.89	9.66	9.73	9.77	9.89
RE/TE	7.29	11.57	13.38	8.26	7.29
ROA	4.31	6.05	7.49	4.48	4.31
ROE	5.29	8.98	10.69	5.90	5.29
NI/Sales	5.71	6.22	7.12	5.45	5.71
Δ TA/TA	4.18	7.63	10.34	4.52	4.18
Δ NI/NI	7.80	10.80	14.10	7.80	7.80
MTB	1.40	1.44	1.72	1.26	1.40
OBS	2301	3730	2088	3943	2301

The table reports median values of firm attributes over the sample period 1992-2007. The total sample involves 6031 observations over the sample period 1992-2007. Dividend payers include firms that pay cash dividends only, stock dividends only, and a mix of cash and stock dividends. Non-payers are the firms that pay neither cash dividends nor stock dividends. Originally-listed firms refer to firms that were listed throughout the whole sample period 1992-2007. Newly-listed firms refer to firms that were newly listed within the sample period 1992-2007. High-Tech firms refer to firms in the IT industry with non-high-tech firms in other industries. SIZE is measured as the logarithms of total assets, log (total asset), where total assets are measured in NTS. RE/TE is the ratio of retained earnings to equity (in %). ROA is the return on total assets, measured as the ratio of net income to total assets (in %). ROE is the return on equity (in %). NI/Sales is the ratio of net income to sales (in %). Δ TA/TA is the growth rate of total assets (in %). Δ NI/NI is the growth rate of net income (in %). MTB is the ratio of market value to book value. OBS is the total number of observations.

Table 6 presents whether firm attributes differ between dividend payers (including cash dividends only, stock dividends only, and a mix of both cash dividends and stock dividends) and non-payers (none dividends) through multivariate logistic regressions. The dependent variable is a dummy variable set to one for dividend payers and zero for non-payers.

Table 6a indicates that return on assets (ROA) is significantly higher for dividend payers than that for non-payers in each of the 16-year sample period. This result is consistent with the prediction of the life cycle hypothesis in that dividend payers are more profitable than non-payers. Moreover, dividend payers are associated with higher asset growth rates than non-payers. The regression coefficients associated with the asset growth variable, total assets growth rate (Δ TA/TA), are generally insignificantly positive.

Table 6b reports similar regression results by adding an additional variable, the ratio of retained earnings to total equity (RE/TE). The results indicate that this variable is significantly positive in almost each year of the sample period. The other profitability variable, ROA, is still significantly positive in most sample

years although the t-values become lower than those in Table 6a where the retained earning variable, RE/TE is not included. The results support the notion that long-term profitability as measured by the ratio of retained earnings to total equity is an important factor in affecting the dividend policy.

Table 5: Classification of Sample Observations by Both time of Listing and Industry

Groups	1992-1999	2000-2007	1992-2007
(1)	(2)	(3)	(4)
Originally-listed firms			
High-Tech industry	127	130	257
Non-high-tech industry	1010	1034	2044
Sub-total	1137	1164	2301
Newly-list firms			
High-tech industry	191	1640	1831
Non-high-tech industry	488	1411	1899
Sub-total	679	3051	3730
Total	1816	4215	6031

The table reports the number of observations for sample firms classified by the time of listing as well as by industry. Sample firms are sorted according to whether they were listed throughout the whole sample period 1992-2007 (originally-listed) or within the sample period (newly-listed) and by industry (high-tech versus non-high-tech)

Table 7 compares firm attributes between firms that distribute stock dividends only and firms that distribute cash dividends only via multivariate logistic regressions. The dependent variable is a dummy variable set to one for firms paying stock dividends only and zero for firms paying cash dividends only. Consistent with the prediction of the life cycle hypothesis, Table 7a indicates that firms paying stock dividends only are associated with higher growth rate but lower profitability.

The coefficients associated with the growth variable, $\Delta TA/TA$, are mostly significantly positive. In comparison, the coefficients associated with the profitability measure, ROA, are largely negative. Table 7b reports similar regression results where the ratio of retained earnings to total equity (RE/TE) is added to the explanatory variables. Consistent with the notion in DeAngelo et al. (2006), the results in Table 7b indicate that the long-term profitability measure of the earned/contributed capital mix, RE/TE, appear to be more significant than the short-term profitability measure of returns on total assets, ROA. The results indicate that firms paying stock dividends only are associated with higher asset growth rate, but lower long-term profitability as measured by the ratio of retained earnings to total equity.

Table 6a: Multivariate Logistic Regressions For Financial Attributes Between Dividend Payers And Non-Payers

	Intercept	Log(SIZE)	ROA	ΔTA/TA
1992	5.12 (0.60)	-0.53 (-0.60)	0.57 (5.18) **	0.00 (0.12)
1993	13.30 (0.47)	-1.33 (-0.45)	1.25 (2.16) *	-0.03 (-0.41)
1994	-4.59 (-0.60)	0.41 (0.52)	0.58 (4.49) **	0.01 (0.23)
1995	-7.57 (-0.92)	0.71 (0.82)	0.69 (5.56) **	0.03 (1.66)
1996	-20.97 (-2.74) **	2.17 (2.74) **	0.57 (5.12) **	0.01 (0.76)
1997	-8.30 (-1.32)	0.83 (1.29)	0.53 (4.92) **	0.02 (1.28)
1998	1.81 (0.40)	-0.18 (-0.39)	0.50 (7.32) **	0.01 (0.77)
1999	-10.77 (-2.38) *	1.05 (2.29) *	0.50 (7.70) **	0.01 (0.77)
2000	-5.61 (-1.43)	0.44 (1.11)	0.58 (8.01) **	0.05 (3.51) **
2001	-0.43 (-0.13)	-0.08 (-0.25)	0.79 (9.16) **	0.01 (0.70)
2002	-2.85 (-1.01)	0.20 (0.69)	0.54 (8.87) **	0.03 (2.02) *
2003	-4.02 (-1.43)	0.30 (1.06)	0.54 (8.71) **	0.04 (3.19) **
2004	2.24 (0.71)	-0.32 (-0.97)	0.58 (9.34) **	0.02 (1.69)
2005	2.50 (-0.77)	0.18 (0.54)	0.73 (9.50) **	0.01 (0.42)
2006	-9.80 (-3.40) **	0.95 (3.22) **	0.43 (9.78) **	0.00 (0.21)
2007	-7.73 (-2.41) *	0.69 (2.11) *	0.63 (8.69) **	0.01 (0.92)
1992-1997	-3.83 (-0.79)	0.38 (0.76)	0.70 (6.21) **	0.01 (0.62)
1998-2007	-3.97 (-2.77) *	0.32 (2.21)	0.58 (16.87) **	0.02 (3.84) **
1992-2007	-3.92 (-2.04)	0.34 (1.75)	0.63 (13.25) **	0.01 (3.00) **

The table reports regression results that examine firm attributes between dividend payers and non-payers. The dependent variable (Y) is a dummy variable set to one for dividend payers (including cash dividends only, stock dividends only, and a mix of cash and stock dividends) and zero for non-payers. The explanatory variables include the logarithm of total assets (log(SIZE)), return on assets (ROA), and total assets growth rate (ΔTA/TA). The asterisks * and ** indicate significance of the t-values at the levels of 5 and 1% respectively.

Table 6b: Multivariate Logistic Regressions for Financial Attributes between Dividend Payers and Non-payers

	Intercept	Log(SIZE)	RE/TE	ROA	Δ TA/TA
1992	9.67 (1.07)	-1.01 (-1.06)	0.20 (2.81)**	0.34 (2.34)*	0.01 (0.21)
1993	23.99 (0.85)	-2.42 (-0.82)	0.24 (1.45)	1.06 (1.58)	-0.05 (-0.46)
1994	4.15 (0.44)	-0.50 (-0.51)	0.20 (2.82)**	0.36 (2.13)*	0.02 (0.52)
1995	0.73 (0.08)	-0.19 (-0.21)	0.17 (2.80)**	0.48 (3.25)**	0.05 (2.46)*
1996	-24.60 (-2.81)**	2.56 (2.81)**	0.30 (3.48)**	0.19 (1.19)	0.00 (0.18)
1997	-5.78 (-0.75)	0.57 (0.74)	0.40 (4.25)**	0.02 (0.11)	0.04 (2.20)*
1998	1.57 (0.34)	-0.15 (-0.32)	0.07 (2.96)**	0.37 (4.88)**	0.02 (1.23)
1999	-12.31 (-2.30)*	1.20 (2.22)*	0.24 (5.14)**	0.26 (2.81)**	0.02 (1.06)
2000	-8.05 (-1.83)	0.70 (1.58)	0.24 (4.64)**	0.29 (2.95)**	0.05 (2.88)**
2001	-1.42 (-0.38)	0.03 (0.07)	0.28 (5.52)**	0.48 (4.75)**	0.00 (0.04)
2002	-3.58 (-1.14)	0.27 (0.85)	0.17 (5.84)**	0.31 (4.21)**	0.03 (2.17)*
2003	-5.86 (-1.68)	0.48 (1.37)	0.25 (6.26)**	0.27 (3.47)**	0.03 (1.60)
2004	4.39 (1.18)	-0.56 (-1.46)	0.20 (5.58)**	0.36 (4.44)**	0.02 (1.09)
2005	1.81 (0.48)	-0.26 (-0.68)	0.23 (4.87)**	0.34 (3.31)**	0.01 (0.73)
2006	-4.80 (-1.19)	0.41 (0.99)	0.37 (6.50)**	0.07 (0.83)	0.01 (0.35)
2007	0.51 (0.11)	-0.15 (-0.34)	0.21 (5.43)**	0.60 (4.88)**	-0.01 (-0.59)
1992-1997	1.36 (0.21)	-0.16 (-0.24)	0.25 (7.16)**	0.41 (2.81)*	0.01 (0.80)
1998-2007	-2.77 (-1.71)	0.20 (1.19)	0.23 (9.36)**	0.33 (7.59)**	0.02 (3.08)*
1992-2007	-1.22 (-0.47)	0.06 (0.23)	0.24 (12.03)**	0.36 (6.17)**	0.01 (2.39)

The table reports regression results that examine firm attributes between dividend payers and non-payers. The dependent variable (Y) is a dummy variable set to one for dividend payers (including cash dividends only, stock dividends only, and a mix of cash and stock dividends) and zero for non-payers. The explanatory variables include the logarithm of total assets (log(SIZE)), retained earnings to equity ratio (RE/TE), return on assets (ROA), and total assets growth rate (Δ TA/TA). The asterisks * and ** indicate significance of the t-values at the levels of 5 and 1% respectively

Table 7 a: Multivariate Logistic Regressions for Financial Attributes between Stock-dividend Payers and Cash-dividend Payers

	Intercept	Log(SIZE)	ROA	ΔTA/TA
1992	-5.09 (-0.52)	0.72 (0.69)	-0.01 (-0.14)	0.07 (2.15)*
1993	1.01 (0.11)	0.07 (0.08)	-0.03 (-0.29)	0.09 (2.14)*
1994	5.14 (0.51)	-0.21 (-0.20)	-0.13 (-1.41)	0.07 (1.67)
1995	2.55 (0.31)	-0.07 (-0.08)	-0.08 (-1.13)	0.06 (2.12)*
1996	-9.41 (-0.77)	1.20 (0.95)	0.05 (0.46)	0.11 (2.29)*
1997	-5.27 (-0.62)	0.70 (0.80)	0.23 (1.80)	0.01 (0.64)
1998	6.98 (1.07)	-0.52 (-0.80)	-0.02 (-0.41)	0.03 (1.65)
1999	1.01 (0.17)	0.13 (0.21)	-0.23 (-2.42)*	0.11 (3.29)**
2000	-1.55 (-0.31)	0.09 (0.17)	-0.01 (-0.11)	0.10 (4.35)**
2001	-1.15 (-0.35)	0.08 (0.24)	-0.02 (-0.35)	0.05 (2.28)*
2002	-4.50 (-1.21)	0.47 (1.25)	-0.31 (-3.51)**	0.06 (3.33)**
2003	0.22 (0.05)	-0.06 (-0.15)	-0.16 (-2.74)**	0.04 (2.53)*
2004	-2.09 (-0.40)	0.14 (0.26)	-0.21 (-3.07)**	0.04 (2.90)**
2005	4.67 (0.80)	-0.58 (-0.96)	-0.34 (-3.56)**	0.07 (2.74)**
2006	0.49 (0.07)	-0.27 (-0.40)	-0.15 (-1.83)	0.03 (1.34)
2007	1.84 (0.35)	-0.32 (-0.60)	-0.18 (-2.38)*	0.02 (0.96)
1992-1997	-1.84 (-0.81)	0.40 (1.78)	0.00 (0.08)	0.07 (4.79)**
1998-2007	0.59 (0.56)	-0.08 (-0.81)	-0.16 (-4.38)**	0.06 (6.04)**
1992-2007	-0.32 (-0.30)	0.10 (0.82)	-0.10 (-2.81)*	0.06 (7.84)**

The table reports regression results that examine firm attributes between stock-dividend payers and cash-dividend payers. The dependent variable (Y) is a dummy variable set to one for stock-dividend payers and zero for cash-dividend payers. The explanatory variables include the logarithm of total assets (log(SIZE)), return on assets (ROA), and total assets growth rate (ΔTA/TA). The asterisks * and ** indicate significance of the t-values at the levels of 5 and 1% respectively.

Table 8 reports the dollar amount of cash dividends and stock dividends for firms classified by both the listing time and industry. Panel A reports the difference in the dollar amount of dividends between the originally-listed firms and the newly-listed firms.

Table 7 b: Multivariate Logistic Regressions for Financial Attributes between Stock-dividend Payers and Cash-dividend Payers

	Intercept	Log(SIZE)	RE/TE	ROA	ΔTA/TA
1992	-5.38 (-0.55)	0.74 (0.72)	0.05 (0.57)	-0.10 (-0.57)	0.08 (2.18)*
1993	2.01 (0.21)	-0.03 (-0.03)	0.07 (0.90)	-0.14 (-0.85)	0.08 (2.11)*
1994	7.93 (0.70)	-0.51 (-0.43)	0.17 (1.38)	-0.38 (-1.77)	0.07 (1.70)
1995	1.97 (0.24)	-0.03 (-0.04)	0.03 (0.70)	-0.12 (-1.30)	0.07 (2.16)*
1996	-9.49 (-0.77)	1.22 (0.95)	-0.02 (-0.26)	0.07 (0.52)	0.11 (2.28)*
1997	-8.87 (-0.88)	1.16 (1.12)	-0.24 (-3.43)**	0.61 (3.25)**	-0.00 (-0.08)
1998	6.89 (1.00)	-0.49 (-0.72)	-0.10 (-2.10)*	0.15 (1.30)	0.03 (1.44)
1999	2.34 (0.37)	0.03 (0.04)	-0.09 (-2.23)*	-0.12 (-1.04)	0.11 (3.21)**
2000	0.52 (0.10)	-0.11 (-0.21)	-0.08 (-1.85)	0.10 (1.07)	0.09 (4.20)**
2001	-1.15 (-0.33)	0.11 (0.30)	-0.10 (-2.41)*	0.12 (1.59)	0.05 (2.27)*
2002	-3.48 (-0.91)	0.40 (1.04)	-0.16 (-2.80)**	-0.08 (-0.72)	0.07 (3.22)**
2003	1.37 (0.34)	-0.15 (-0.37)	-0.12 (-2.39)*	-0.01 (-0.15)	0.05 (2.71)**
2004	-0.77 (-0.15)	0.04 (0.07)	-0.09 (-1.72)	-0.10 (-1.07)	0.04 (2.93)**
2005	3.83 (0.64)	-0.47 (-0.76)	-0.09 (-1.39)	-0.20 (-1.51)	0.08 (2.80)**
2006	0.16 (0.02)	-0.20 (-0.29)	-0.06 (-1.01)	-0.09 (-0.84)	0.02 (1.18)
2007	0.25 (0.05)	-0.13 (-0.25)	-0.08 (-2.09)*	-0.05 (-0.56)	0.02 (0.74)
1992-1997	-1.97 (-0.69)	0.43 (1.46)	0.01 (0.19)	-0.01 (-0.06)	0.07 (4.39)**
1998-2007	1.00 (1.10)	-0.10 (-1.17)	-0.10 (-11.47)**	-0.03 (-0.80)	0.06 (5.76)**
1992-2007	-0.12 (-0.10)	0.10 (0.74)	-0.06 (-2.29)	-0.02 (-0.39)	0.06 (7.37)**

The table reports regression results that examine firm attributes between stock-dividend payers and cash-dividend payers. The dependent variable (Y) is a dummy variable set to one for stock-dividend payers and zero for cash-dividend payers. The explanatory variables include the logarithm of total assets (log(SIZE)), retained earnings to equity ratio (RE/TE), return on assets (ROA), and total assets growth rate (ΔTA/TA). The asterisks * and ** indicate significance of the t-values at the levels of 5 and 1% respectively.

The results indicate a significant increase in the dollar amount of cash dividends in the first sub-period than that in the second sub-period for both the originally listed firms as well as the newly listed firms. For the originally listed firms, the cash dividend increases from NT\$0.27 per share in the first sub-period to NT\$0.49 in the second sub-period. For the newly listed firms, the cash dividend increases by a much

larger proportion from NT\$0.19 in the first sub-period to NT\$0.89 per share in the second sub-period. In comparison, the dollar amount of stock dividends in the first sub-period is much lower than that in the second sub-period for both the originally listed firms as well as the newly listed firms. For originally listed firms, the stock dividend decreases from NT\$1.03 in the first sub-period to NT\$0.22 per share in the second sub-period. For newly-listed firms, the stock dividend decreases from NT\$1.61 in the first sub-period to NT\$0.49 in the second sub-period. When newly-listed firms and originally-listed firms are compared, the difference indicates that newly-listed firms distribute more cash dividends than originally-listed firms in the second sub-period, than in the first sub-period. Similarly, newly listed firms distribute more stock dividends than originally-listed firms in the second sub-period.

Table 8: The Dollar Amount of Cash Dividends and Stock Dividends for Firms Classified by Both the Listing Time and Industry

Panel A								
	Originally-listed firms Panel A				Newly-listed firms			
	Observations	Cash Dividends	Stock dividends	Stock dividend ratio	Observations	Cash Dividends	Stock dividends	Stock dividend ratio
1992-1999	1137	0.27	1.03	78.61	679	0.19	1.61	88.84
2000-2007	1164	0.49	0.22	33.95	3051	0.89	0.49	38.37
1992-2007	2301	0.38	0.62	56.28	3730	0.57	1.01	61.92
Panel B								
	Non-high-tech firms				High-Tech firms			
	Observations	Cash Dividends	Stock dividends	Stock dividend ratio	Observations	Cash Dividends	Stock dividends	Stock dividend ratio
1992-1999	1498	0.27	1.04	78.87	318	0.17	1.97	91.53
2000-2007	2445	0.66	0.25	30.66	1770	0.96	0.69	42.93
1992-2007	3943	0.46	0.64	54.76	2088	0.56	1.33	67.23
Panel C								
	Difference between newly-listed firms and originally-listed firms				Difference between high-tech firms and non-high-tech firms			
	Observations	Cash Dividends	Stock dividends	Stock dividend ratio	Observations	Cash Dividends	Stock dividends	Stock dividend ratio
1992-1999		-0.08	0.58	10.23		-0.10	0.93	12.66
2000-2007		0.40	0.27	4.42		0.30	0.44	12.27
1992-2007		0.19	0.39	5.64		0.10	0.69	12.47

The table reports the dollar amount of cash dividends and stock dividends for originally-listed firms versus newly-listed firms (Panel A), and for high-tech firms versus non-high-tech firms (Panel B). Panel C represents the difference between originally-listed firms versus newly-listed firms and high-tech firms versus non-high-tech firms

Table 9 examines firm attributes between newly-listed firms and originally-listed firms, and between high-tech sample firms and non-high-tech sample firms. Panel A1 reports firm attributes between newly-listed firms and originally-listed firms via multivariate logistic regressions. The dependent variable is a dummy variable set to one for newly-listed firms and zero for originally-listed firms. As expected, the results indicate that newly-listed firms are associated with smaller firm size, SIZE, but higher asset growth rate, $\Delta TA/TA$, and higher return on total assets, ROA. When the retained earnings ratio, RE/TE, is added into explanatory variables, Panel A2 of Table 9 indicates that only the asset growth variable, $\Delta TA/TA$, remains significantly positive in both sub-periods. Panel B1 reports firm attributes between high-tech and non-high-tech sample firms. Similarly, the results indicate that high-tech firms are associated with significantly higher asset growth rate, $\Delta TA/TA$, and higher profitability, ROA. When the retained earnings ratio is added, Panel B2 indicates that only the asset growth rate remains significantly positive. The above empirical results indicate that firms listed on the Taiwan Stock Exchange are associated with higher stock dividend payments in the first sub-period (1992-1997) than in the second sub-period (1998-2007). The trend of lower stock dividends appears to reflect the lower growth rate for the sample firms in the sample period 1992-2007. The results are consistent with the prediction of the life

cycle hypothesis of dividend payments as suggested in Fama and French (2001) and DeAngelo et al (2006). However, Baker and Wurgler (2004a, b) suggest an alternative explanation in that firms adjust their dividend policy to cater to the market demand. They point out that firms distribute more dividends as the dividend premium is higher. That is, firms set their dividends according to the premium paid by the investors. Thus, future research regarding to the changing pattern of dividend payments could examine this hypothesis. It is likely that the catering theory may provide further insight into the practice of dividend payments.

Table 9: Firm Attributes between Newly-listed and Originally-listed Firms, and between High-tech and Non-high-tech Firms

	Intercept	Log(SIZE)	RE/TE	ROA	$\Delta TA/TA$
Panel A 1: Firm Attributes between Newly-Listed Firms and Originally-Listed Firms (Three Explanatory Variables)					
1992-1999	13.62 (7.41)**	-1.53 (-7.15)**		0.03 (4.14)**	0.03 (7.80)**
2000-2007	12.65 (29.90)**	-1.22 (-24.82)**		0.04 (5.35)**	0.02 (3.55)**
1992-2007	13.11 (15.24)**	-1.36 (-12.68)**		0.03 (6.87)**	0.03 (6.76)**
Panel A 2: Firm Attributes between Newly-Listed Firms and Originally-Listed Firms (Four Explanatory Variables)					
1992-1999	14.88 (6.81)**	-1.67 (-6.52)**	0.04 (3.19)**	-0.04 (-2.22)	0.03 (8.39)**
2000-2007	12.98 (37.57)**	-1.25 (-29.43)**	0.00 (0.88)	0.03 (3.57)**	0.02 (3.38)**
1992-2007	13.87 (13.53)**	-1.44 (-11.15)**	0.02 (2.60)*	-0.00 (-0.12)	0.03 (6.66)**
Panel B 1: Firm Attributes between High-Tech and Non-High Tech Firms (Three Explanatory Variables)					
1992-1999	-0.85 (-0.44)	-0.21 (-1.02)		0.08 (3.75)**	0.03 (4.07)**
2000-2007	-1.28 (-3.09)*	0.05 (2.12)		0.03 (2.21)	0.03 (3.08)*
1992-2007	-1.06 (-1.11)	-0.08 (-0.74)		0.05 (3.93)**	0.03 (5.11)**
Panel B 2: Firm Attributes Between High-Tech and Non-High Tech Firms (Four Explanatory Variables)					
1992-1999	-0.89 (-0.43)	-0.21 (-0.97)	0.00 (0.13)	0.08 (1.89)	0.03 (4.27)**
2000-2007	-1.10 (-2.84)*	0.04 (1.75)	0.00 (0.08)	0.03 (1.17)	0.03 (2.99)*
1992-2007	-1.00 (-0.99)	-0.09 (-0.80)	0.00 (0.16)	0.05 (2.20)*	0.03 (5.12)**

Panel A examines firm attributes between newly-listed and originally-listed firms. The dependent variable is a dummy variable set to one for newly-listed firms and zero for originally-listed firms. Panel B examines firm attributes between high tech firms and non-high-tech firms. The dependent variable is a dummy variable set to one for high-tech firms and zero for non-high-tech firms. The explanatory variables include logarithm of total assets ($\log(SIZE)$), the ratio of retained earnings to total equity (RE/TE), return on total assets (ROA), and total asset growth ratio ($\Delta TA/TA$). The asterisks * and ** indicate significance of the t-values at the levels of 5 and 1% respectively.

CONCLUSION

This paper examines the dividend policy for firms listed on the Taiwan Stock Exchange and test the life cycle hypothesis. The sample involves 6031 observations of dividend payments over the 16-year period 1992-2007. The results indicate that the dividend-paying types of publicly traded firms change with the firm characteristics. The dividend payers (cash dividends, stock dividends, or both) are associated with higher profitability, higher asset growth rate, and higher market-to-book ratio than non-payers (none

dividends). Consistent with the prediction of life cycle hypothesis, the firms have propensity to pay different types of dividend payments in the different life cycle stages. The results indicate that stock-dividend payers are associated with higher asset growth rate, but lower ratio of retained earnings to total equity than those for cash-dividend payers. In particular, stock-dividend payers are associated with higher asset growth rate and lower return on assets, lower retained to total equity ratio than those for cash-dividend payers. These results are consistent with the life cycle hypothesis of dividend payment in that younger firms with higher growth potential but lower profitability tend to distribute more stock dividends than cash dividends. When firms become more mature as characterized by lower growth potential but higher profitability tend to distribute more cash dividends as opposed to stock dividends

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