The Market Valuation Hypothesis of Dividend Policy: New Evidence from Japan

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Abstract

This paper explores the determinants of the dividend policy in Japan. First, our empirical investigations reveal that in contrast to the US case, the dividend premium is neither the determinant of the dividend initiations nor the continuations of the Japanese firms. Second, we newly find that the strong determinants of the Japanese firms' dividend initiations are the nonpayers' same year's and previous year's market-to-book ratios. In addition to the above, we also reveal that the strong determinants of the Japanese firms' dividend continuations are the payers' same year's and previous year's market-to-book ratios. These results clearly support our new hypothesis, the market valuation hypothesis of the dividend policy in Japan, and demonstrate our novel contributions of this study. Furthermore, our empirical results also indicate that the Japanese corporate managers can foresee their own firms' earnings for at most two years ahead. We consider that this evidence may not be consistent with the traditional signaling hypothesis of dividend policy.

Keywords: catering theory of dividends; dividend policy; inefficient markets; market valuation hypothesis of dividend policy; self-attribution bias

1. Introduction

The well-known seminal paper by Miller and Modigliani (MM) (1961) proved that the firms' dividend policies are irrelevant to their share values when capital markets are perfect and efficient. Allen and Michaely (2003) and Kalay and Lemmon (2008) conducted the excellent literature reviews of payout policy, for example. In addition, regarding survey researches of executives' views of payout policy, there exist several informative papers such as Baker et al. (1985), Graham and Harvey (2001), and Brav et al. (2005).

After the above MM's proof, many researchers extended their study with different views and by different approaches. There are many important studies that follow MM (1961) as follows. First, the papers focused on the policies of payout of firms are Lintner (1956), Fama and Babiak (1968), Black and Scholes (1974), Bhattacharya and Hakansson (1982), Marsh and Merton (1987), La Porta et al. (2000), Fama and French (2001), DeAngelo et al. (2004, 2006), Handley (2008), Denis and Osobov (2008), Brockman and Unlu (2009, 2011), Chay and Suh (2009), and John et al. (2011). In addition, the literature studied the signaling hypothesis of dividend policy are Watts (1973), Bhattacharya (1979), Asquith and Mullins (1983), Miller and Rock (1985), John and Williams (1985), Healy and Palepu (1988), Michaely et al. (1995), DeAngelo et al. (1996), Benartzi et al. (1997), Johnson et al. (2006), and Liu et al. (2008). Further, the papers analyzed the tax effects on payout policy are Black (1976), Miller (1977), Miller and Scholes (1978), Peterson et al. (1985), Hubbard and Michaely (1997), Allen et al. (2000), Christoffersen et al. (2005), and Desai and Jin (2011). Moreover, the studies investigated the stock repurchases are Dann (1981), Bagwell and Shoven (1989), Skinner (2008), and von Eije and Megginson (2008). Furthermore, the literature analyzed the payout policy from the viewpoints of behavioral economics and behavioral finance are Shefrin and Statman (1984), Stein (1989, 1996), Baker and Wurgler (2004a, 2004b), and Graham and Kumar (2006). Among them, we note a new interesting theory called the catering theory of dividends by Baker and Wurgler (BW) (2004a). BW (2004a) suggested the stock price difference between dividend payers and nonpayers are important. They called this difference of pricing as the dividend premium. Their catering theory of dividends insisted that when payers are more highly valued than nonpayers, corporate managers initiate or continue their dividend payments in the US. BW (2004a) advocated when the aggregated time series dividend premium is higher, corporate managers cater to the increased demand for payers, and thus initiate or continue their dividend payments. As other related studies, Long (1978), Poterba (1986), Eades et al. (1994), and Kothari and Shanken (1997) analyzed the valuations and the pricing of corporate dividends.

As above, BW (2004a) emphasized the importance of the dividend premium; however, different from their focus, this paper notes not the relative valuations as the dividend premium but the absolute valuations of payers or nonpayers. The reason of this is based on the psychological notion of self-attribution bias, which is well known in behavioral economics and behavioral finance. This self-attribution bias indicates the people's tendency to attribute their successes to their own ability, while this bias also suggests the people's tendency to attribute their failures to external unlucky forces. (Important papers on this self-attribution bias are such studies as Langer and Roth (1975), Kahneman and Tversky

(2000), and Gilovich et al. (2002).) As this well-known psychological notion suggests, we consider that the highest concern for the corporate managers are their own firms' market valuations. From these arguments, we derive new hypothesis of dividend policy in this paper.

More specifically, we derive new hypothesis, which we call, the market valuation hypothesis of dividend policy in Japan. This means that, in their dividend policy decisions such as dividend initiations and continuations, the Japanese firms consider their own market valuations in capital markets. Hence, the objective of this paper is to empirically test this hypothesis by using the Japanese data.

The novel contributions of this paper are as follows. First, our empirical examinations reveal that, in contrast to the US case, the dividend premium is neither the determinant of the dividend initiations nor the continuations of the Japanese firms. Second, we also exhibit that the strong determinants of the Japanese firms' dividend initiations are the dividend nonpayers' same year's and previous year's market-to-book ratios. Moreover, we also find that the strong determinants of the Japanese firms' dividend continuations are the dividend payers' same year's and previous year's market-to-book ratios. These results are consistent with our market valuation hypothesis of the dividend policy. In addition, our investigations also find that the Japanese corporate managers can foresee their own firms' earnings for at most two years ahead. This is important because this evidence may be against the traditional signaling hypothesis of dividend policy. Furthermore, we confirm the existence of positive dividend premium for almost 15 years in Japan. Thus, as BW (2004a) suggested, dividend-paying shares are generally more highly valued also in the Japanese capital markets.

The rest of the paper is organized as follows. Section 2 first documents our hypothesis and testable predictions. Section 3 explains our data and methodology, Section 4 demonstrates our empirical results and interpretations, Section 5 implements several discussions and derives some implications, and Section 6 concludes the paper.

2. Hypothesis and Testable Predictions

2.1 Hypothesis Development

According to the catering theory of dividends, the relative valuations of payers over nonpayers are important. However, taking into account the important psychological notion of the self-attribution bias, the firm's own market valuation shall be the most important for the firm's manager. The literature of behavioral economics and behavioral finance also documents that this self-attribution bias is one common source of overconfidence. There exist many studies focusing on this overconfidence such as Odean (1999), Barber and Odean (2000, 2001), and Malmendier and Tate (2005, 2008). However, in the literature of economics and finance, there is little study that directly focuses on this self-attribution bias as our analyzing context, hence our hypothesis development in this paper is quite novel.

In addition, the Japanese capital markets are not so developed as those in the US. Further, the Japanese corporate managers may not be as sophisticated as the US corporate managers.

Hence, the Japanese corporate managers do not or cannot pay attention to the relative firm valuations as the dividend premium but pay attention to their own firms' valuations only. Therefore, we consider that, in Japan, not the relative but the absolute firms' own valuations in capital markets play a key role in the decisions of dividend policies. Based on the above arguments, we present a new hypothesis of dividend policy, the market valuation hypothesis of dividend policy, for the Japanese firms in this paper as follows.

The Market Valuation Hypothesis of Dividend Policy. *In their dividend policy decisions such as dividend initiations and continuations, firms take into consideration their own market valuations in capital markets.*

From this hypothesis, it is possible to derive more concrete testable predictions for empirical examinations. We discuss them in the next subsection.

2.2 Empirical Predictions

In accordance with the above new hypothesis we derived, we present two testable predictions as follows. First is the empirical prediction for the dividend initiations.

Testable Prediction 1. *When their market values in capital markets increase, firms decide to initiate their dividend payments. Hence, more concretely, the firm's market-to-book ratio shall be a key determinant of its dividend initiation behavior.*

Next, from our new hypothesis, we derive our second empirical prediction for the dividend continuations as follows.

Testable Prediction 2. *When their market values in capital markets are high or rise, firms generally continue to pay their dividends. Therefore, more specifically, the firm's market-to-book ratio shall be a key determinant of its dividend continuation behavior.*

From the next section, we test these empirical predictions by using the Japanese data.

3. Data and Methodology

3.1 Basic Variable Constructions

Our basic dividend payment measure constructions follow BW (2004a). Our full sample period spans from 1986 to 2006 and all raw data are supplied by the QUICK Corp. In addition, we analyze all Japanese firms listed on the Tokyo Stock Exchange (TSE) First Section. We define a firm-year observation as a payer if the firm pays positive dividends; otherwise, we count the firm as a nonpayer. In order to aggregate this firm-level observation into useful time series data, we first construct two aggregate identities following BW (2004a):

$$Payers_t \equiv New\ Payers_t + Old\ Payers_t + List\ Payers_t \tag{1}$$

$$Old\ Payers_t \equiv Payers_{t-1} - New\ Nonpayers_t - Delist\ Payers_t. \tag{2}$$

Further, we also need to construct the following variable:

$$Nonpayers_t \equiv New\ Nonpayers_t + Old\ Nonpayers_t + List\ Nonpayers_t. \qquad (3)$$

Equation (1) defines the number of dividend payers in year t, Equation (2) means the payers who pay dividends in year $t-1$ and year t, and Equation (3) defines the nonpayers in year t. More in detail, $Payers_t$ denotes the total number of dividend payers in year t, $New\ Payers_t$ denotes the number of dividend initiators in year t among the nonpayers in the previous year, and $Old\ Payers_t$ means the number of payers in year t, which also paid dividends in the previous year. Further, $List\ Payers_t$ denotes the number of this year's payers, which were not in the last year's sample, and $New\ Nonpayers_t$ denotes the number of dividend omitters among the previous year's payers. Moreover, $Delist\ Payers_t$ indicates the number of last year's payers, which are not in the sample of year t, $Old\ Nonpayers_t$ means the number of nonpayers in year t, which did not pay dividends in the previous year either, and $List\ Nonpayers_t$ denotes the number of this year's nonpayers, which were not in the last year's sample. We also note that lists and delists are as to the TSE First Section. As in BW (2004a), we then define and use the following ratios to capture the dividend payment evolutions of the Japanese firms:

$$Initiate_t \equiv \frac{New\ Payers_t}{Nonpayers_{t-1} - Delist\ Nonpayers_t}, \qquad (4)$$

$$Continue_t \equiv \frac{Old\ Payers_t}{Payers_{t-1} - Delist\ Payers_t}, \qquad (5)$$

$$Listpay_t \equiv \frac{List\ Payers_t}{List\ Payers_t + List\ Nonpayers_t}. \qquad (6)$$

In words, $Initiate_t$ is the ratio of dividend initiation in year t, $Continue_t$ means the ratio at which firms continue paying dividends in year t, and $Listpay_t$ denotes the ratio at which new lists in the sample pay dividends in year t. Hence, these variables capture the dividend policy decisions of the Japanese firms. Table 1 exhibits the aggregate totals and three dividend payment rates for the Japanese firms. We can overview the situation regarding the Japanese firms' dividend policies by using the data in Table 1.

Next is the construction of the basic and important explanatory variable, the stock market dividend premium. Theoretically, it is important to measure the difference between the market prices of firms that employ the same investment policy but different dividend policies. This is because in the frictionless and efficient markets assumed in MM (1961), this price difference should be zero. However, because of the limits to arbitrage, BW (2004a) advocated that the uninformed demand for dividend-paying shares causes price differences between dividend-paying shares and non-dividend shares. According to BW (2004a), firms initiate or continue their dividend payments by catering the increase of demand for dividend

paying-shares when the dividend premium is high. This is the key variable for testing the catering theory of dividends. Following BW (2004a), we construct the dividend premium variable, P^{D-ND}. This is the difference in the logs of the average market-to-book (M/B) ratios of payers and nonpayers. More precisely, we first compute book value-weighted averages of the M/B ratios separately for payers and nonpayers in each year. Then we construct the final series of dividend premium, P^{D-ND}, as the difference of the logs of these averages. We define M/B ratios following Fama and French (FF) (1993, 1996): following FF (1993, 1996), we constructed the M/B ratio as book assets minus book equity plus market equity all divided by book assets. We display the time series dynamics of the dividend premium of the Japanese firms in Figure 1. Moreover, in order to test our original hypothesis, the market valuation hypothesis of dividend policy, we newly introduce other variables in the next subsection.

3.2 Testing Methodology and Additional Variables for the New Hypothesis Tests

This section firstly documents the testing methodology of dividend policies of the Japanese firms. After that, we also explain our new variables in order to test our market valuation hypothesis of dividend policy. In the test, more precisely, we examine alternative intertemporal relations between nominated explanatory variables and the dividend policy of the Japanese firms by using several models. Our base models are the following regressions; namely, for *Initiate*:

$$Initiate_t = \xi_0 + \xi_1 X_{t+k} + \xi_2 Tax_{t+k} + \xi_3 Year_{t+k} + \tau_t, \tag{7}$$

and for *Continue*:

$$Continue_t = \eta_0 + \eta_1 X_{t+k} + \eta_2 Tax_{t+k} + \eta_3 Year_{t+k} + \kappa_t, \tag{8}$$

where $k = -1, 0, 1, 2,$ or 3 and the variable X_{t+k} is our nominated dividend policy determinant. Namely, when $k = -1$, these regressions examine the determinants of one-year-ahead dividend policies of the Japanese firms by using the variable in the previous year, X_{t-1}. When $k = 0$, these regressions explore the contemporaneous determinants of their dividend policies. Further, when $k = 1, 2,$ or 3, these regressions investigate the situation of several variables representing the Japanese firms' conditions after their dividend policy decisions.

In the above regressions, following BW (2004a), we include Tax_{t+k} and $Year_{t+k}$ as control variables. Tax_{t+k} denotes the ratio of after-tax income from dividends relative to after-tax income from capital gains and $Year_{t+k}$ is the time trend variable. Therefore, the variable Tax_{t+k} measures the favorability of dividends over capital gains from the viewpoint of the Japanese tax system. Further, as explanatory variables, X_{t+k}, we newly employ the following variables. First, other than VWP_{t+k}^{D-ND}, $VWNonpayerE/A_{t+k}$ ($VWPayerE/A_{t+k}$) means the book value-weighted nonpayers' (payers') after-tax earnings-to-total-asset ratios. (Following BW (2004a), we employ the book-value weighted variables in this study.)

Further, $VWNonpayerM/B_{t+k}(VWPayerM/B_{t+k})$ denotes the book value-weighted nonpayers' (payers') M/B ratios, and VWM/B_{t+k} indicates the book value-weighted all firms' M/B ratios. In addition, $VWNonpayerSIZE_{t+k}$ ($VWPayerSIZE_{t+k}$) denotes the book value-weighted nonpayers' (payers') market capitalizations, and $VWSIZE_{t+k}$ means the book value-weighted all firms' market capitalizations. Moreover, $VWPayerD/P_{t+k}$ denotes the book value-weighted payers' dividend yields. With regard to the dependent variables of our regressions, as we previously mentioned, $Initiate_t$ means the dividend initiation rates in year t and $Continue_t$ is the dividend continuation rates in year t.

We note here that $VWNonpayerE/A_{t+k}$, $VWPayerE/A_{t+k}$, $VWNonpayerM/B_{t+k}$, $VWPayerM/B_{t+k}$, VWM/B_{t+k}, $VWNonpayerSIZE_{t+k}$, $VWPayerSIZE_{t+k}$, $VWSIZE_{t+k}$, and $VWPayerD/P_{t+k}$ are new variables tested in this study. Those were neither tested in BW (2004a) nor in other studies. Thus, the introducing of these new variables demonstrates the novelty of our empirical examinations.

4. Empirical Results and Interpretations

Tables 2 to 6 display the results of various regressions. Table 2 shows the relations between their dividend payments and the previous year's situations of the Japanese firms, Table 3 indicates the contemporaneous relations between their dividend payments and the Japanese firms' situations, and Tables 4 to 6 exhibit the relations between their dividend policies and the following years' conditions of the Japanese firms. The test results shown in Tables 2 to 6 are those of the new comprehensive empirical explorations of the real intertemporal determinants of the dividend policies of the Japanese firms.

4.1 Dividend Premium

Regarding the dividend premium, first, panel A of Table 2 indicates that, according to the coefficient of the variable VWP_{t-1}^{D-ND}, the dividend premium in the previous year is statistically significant with negative sign for the dividend initiations of the Japanese firms. Further, panel B of Table 2 suggests that the coefficient of VWP_{t-1}^{D-ND} is also negative for their dividend continuations.

Further, panels A and B of Table 3 display that, the coefficients of the same year dividend premium, VWP_t^{D-ND}, are negative for both the dividend initiations and continuations of the Japanese firms. Moreover, panels A and B of Table 4 indicate that the coefficients of the next year dividend premium, VWP_{t+1}^{D-ND}, are statistically significantly negative for both their dividend initiations and continuations.

Therefore, our empirical results indicate that, when the Japanese firms initiate or continue their dividend payments, their catering behaviors cannot be seen, even if we take into consideration the variables' intertemporal relations. Therefore, from our results, we understand that the catering theory is not valid in Japan.

4.2 Market Valuations

Regarding the firm market valuations, first, panel A of Table 2 indicates that, according to the adjusted *R*-squared value, the nonpayers' value-weighted M/B ratios in the previous year are the statistically strongest determinants of the dividend initiations of the Japanese firms. Further, panel B of Table 2 suggests that the payers' value-weighted M/B ratios in the previous year are the statistically strong determinants of the dividend continuations of the Japanese firms.
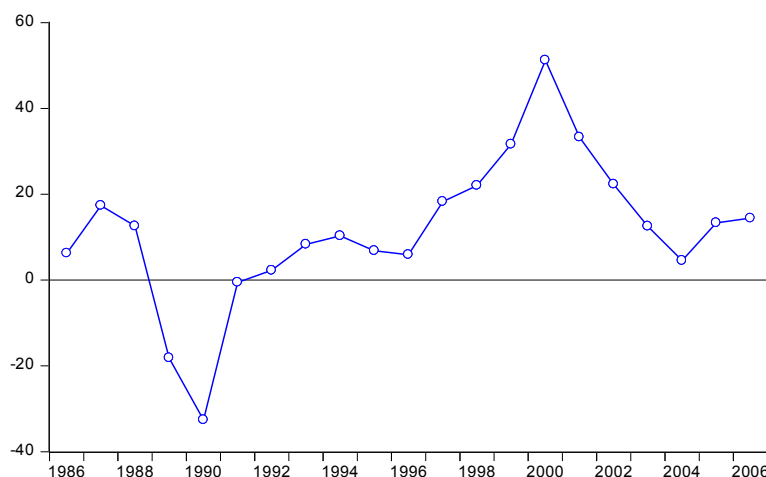
Figure 1: The Dividend Premium of the Japanese Firms

Notes: This figure exhibits the time series dynamics of the dividend premium as to the Japanese firms listed on the Tokyo Stock Exchange (TSE) First Section. Based on the arguments of limits to arbitrage, Baker and Wurgler (BW) (2004a) suggested that the uninformed demand for dividend-paying shares causes the price differences between dividend-paying shares and non-dividend shares. This dividend premium is the key variable for testing the catering theory of dividends suggested by BW. Hence, in order to test this catering theory, following BW (2004a), we constructed the dividend premium variable mentioned above, and we denote this variable in year *t* as P_t^{D-ND}. More specifically, this is the difference in the logs of the average market-to-book (M/B) ratios of dividend payers and nonpayers. (We define M/B ratios following Fama and French (FF) (1993, 1996).) More precisely, we first compute book value-weighted averages of the M/B ratios separately for payers and nonpayers in each year. Then we constructed the final series of this dividend premium, P_t^{D-ND} as the difference of the logs of these averages. Our full sample period spans from 1986 to 2006 and we analyze all Japanese firms listed on the TSE First Section.

Second, panel A of Table 3 implies that, according to the adjusted *R*-squared values, again, the aggregate variable of the nonpayers' value-weighted M/B ratios in the same year is the statistically strongest determinant of the dividend initiations of the Japanese firms. Moreover, panel B of Table 3 indicates that the aggregate variable of the payers' value-weighted M/B ratios in the same year is also the statistically strong determinant of the dividend continuations of the Japanese firms.

We also exhibit the dynamics of the dividend initiation rates and the aggregate time series of the nonpayers' market-to-book ratios in Figure 2. From this figure, we can recognize the highly correlated dynamics of the two series. Furthermore, we display the dynamics of the dividend continuation rates and the aggregate time series of the payers' market-to-book ratios in Figure 3. From this figure, we can similarly view the strongly correlated dynamics of the two series.

To sum up, the results exhibited in Tables 2 and 3 demonstrate that when their own market values are high, the Japanese corporations decide to initiate or continue their dividend payments. Therefore, our empirical results clearly support our new hypothesis, the market valuation hypothesis of dividend policy in Japan.
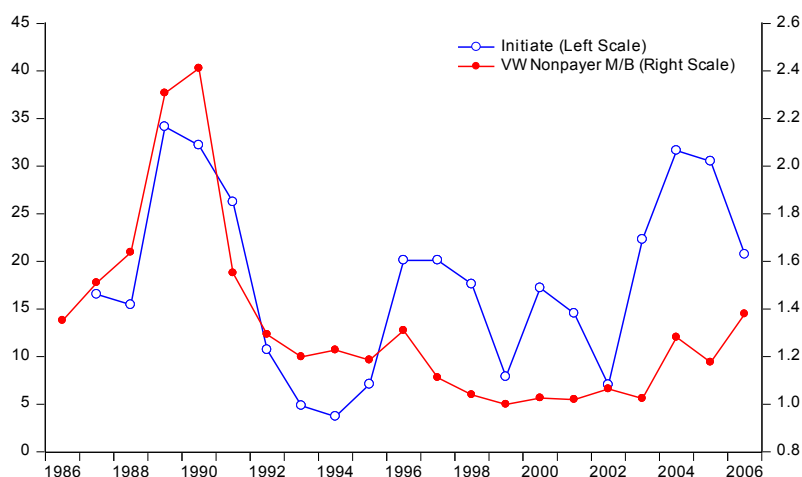
Figure 2: Dividend Initiation Rates and Nonpayers' Market-to-book Ratios

Notes: This figure demonstrates the time series dynamics of the dividend initiation rates and the aggregate time series of the dividend nonpayers' market-to-book (M/B) ratios of the Japanese firms. First, dividend initiation rate, which is denoted as $Initiate_t$, is the ratio of dividend initiation of the Japanese firms in year t. Moreover, the aggregate variable of the dividend nonpayers' M/B ratios, which is denoted as $VWNonpayerM/B_t$, is the aggregate time series variable of the book value-weighted nonpayers' M/B ratios. We computed M/B ratios following Fama and French (FF) (1993, 1996). In addition, our sample period for these two series spans from 1987 to 2006 and we analyze all Japanese firms listed on the Tokyo Stock Exchange (TSE) First Section.

4.3 Corporate Earnings

We next consider the influence of corporate earnings on the dividend policies of the Japanese firms in this subsection. First, panels A and B of Table 2 indicate that, according to the coefficients of the earnings ratios, we understand that the corporate earnings in the previous year are neither the determinants of the dividend initiations nor the continuations of the Japanese firms. Furthermore, inspecting the contemporaneous relations, as panel B of Table 3 demonstrates, according to the adjusted R-squared values, we understand that $VWPayerE/A_t$ is the strongest determinant of the dividend continuations of the Japanese firms listed on the TSE First Section. Moreover, in the next year of their dividend payment decisions, as panels A and B of Table 4 indicate, $VWPayerE/A_{t+1}$ exhibits the statistically significant positive relations with the dividend initiation and continuation behaviors of the Japanese firms.

Therefore, from our empirical results, we understand that, as to the corporate earnings, they are strong contemporaneous determinants of the policy decisions of the dividend continuations in Japan. In addition, our results also indicate that, at least up to one year after their decisions of dividend initiations and continuations, their corporate earnings are kept in rather good conditions. We here note that favorable earnings sustainability after firms' dividend policy decisions is important for judging the validity of the traditional dividend

signaling hypothesis.
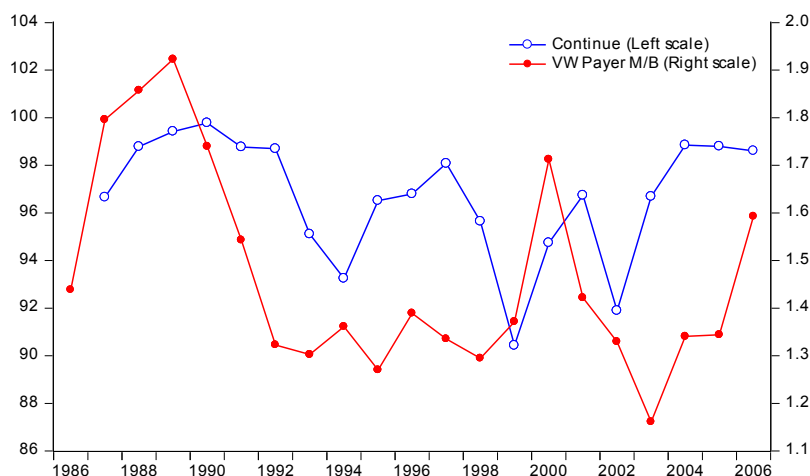
Figure 3: Dividend Continuation Rates and Payers' Market-to-book Ratios

Notes: This figure shows the time series dynamics of the dividend continuation rates and the dividend payers' market-to-book (M/B) ratios of the Japanese firms. First, dividend continuation rate, denoted as $Continue_t$, is the ratio at which firms continue paying dividends in year t. Further, the aggregate variable of the dividend payers' M/B ratios, denoted as $VWPayerM/B_t$, is the aggregate time series variable of the book value-weighted payers' M/B ratios. We computed M/B ratios following Fama and French (FF) (1993, 1996). Our sample period for these series spans from 1987 to 2006 and we analyze all Japanese firms listed on the Tokyo Stock Exchange (TSE) First Section.

5. Discussions and Implications

5.1 Dividend Premium and Market Efficiency

As Figure 1 indicates, for almost 15 years after 1992, the dividend premium in Japan is continuously in plus. From the viewpoints of MM (1961), where the frictionless and efficient markets are assumed, the difference between the market prices of firms that employ the same investment policy but different dividend policies should be zero (For example, Shleifer (2000) and Stein (1989, 1996) presented the evidence of inefficient markets.). However, as BW (2004a) suggested, dividend-paying shares are generally more highly priced than non-dividend shares also in the Japanese capital markets. Hence, our data imply that the Japanese capital markets might not always be perfectly efficient differently from the MM (1961) world. However, this matter is quite difficult, and in order to derive the conclusion as to the issue of market efficiency, we consider that we should further inspect various aspects of payers and nonpayers. In the real world, it may be difficult to find firms that employ the same investment policy in general. Nevertheless, it is interesting fact that there exists the continuous positive dividend premium in the Japanese capital markets.

5.2 The Market Valuation Hypothesis and Corporate Behaviors in the US and Japan

As we documented before, the determinants of the Japanese firms' dividend initiations are not the dividend premium but the nonpayers' same year's and previous year's M/B ratios. Similarly, the determinants of the Japanese firms' dividend continuations are not the dividend

premium but the payers' same year's and previous year's M/B ratios. As Figure 2 and 3 demonstrate, the time series linkages between dividend initiation rates and nonpayers' M/B ratios and those between dividend continuation rates and payers' M/B ratios are rather strong in Japan. What then does this evidence mean? We consider that our empirical results indicate that again, the most important matter for the Japanese firms' dividend policies is not the relative firm valuation but its own firm valuation in capital markets. On the other hand, in the US, relative valuations of payers and nonpayers are important as BW (2004a) demonstrated, thus our empirical results show the crucial difference of the relations of the dividend policies and firm valuations in the US and Japan. We consider this evidence in Japan attribute to the high self-concerns of the Japanese managers, which are suggested by the psychological notion of self-attribution bias.

Table 1: Measures of dividend payment

	Payers				Nonpayers				Payment Rates (%)		
Year	Total	New	Old	List	Total	New	Old	List	Initiate	Continue	Listpay
1987	827	22	781	24	138	27	111	0	16.54	96.66	100.00
1988	862	21	817	24	126	10	115	1	15.44	98.79	96.00
1989	922	43	857	22	88	5	83	0	34.13	99.42	100.00
1990	973	28	920	25	61	2	59	0	32.18	99.78	100.00
1991	1002	16	960	26	57	12	45	0	26.23	98.77	100.00
1992	1023	6	987	30	63	13	50	0	10.71	98.70	100.00
1993	982	3	971	8	109	50	59	0	4.84	95.10	100.00
1994	925	4	912	9	170	66	104	0	3.70	93.25	100.00
1995	906	12	888	6	189	31	158	0	7.10	96.52	100.00
1996	939	38	877	24	180	30	150	0	20.11	96.80	100.00
1997	993	36	920	37	161	18	143	0	20.11	98.08	100.00
1998	1017	28	943	46	174	43	131	0	17.61	95.64	100.00
1999	956	13	917	26	249	97	152	0	7.88	90.43	100.00
2000	1022	42	900	80	253	50	202	1	17.21	94.74	98.77
2001	1109	35	981	93	242	33	206	3	14.52	96.75	96.88
2002	1077	16	1008	53	301	89	212	0	7.02	91.89	100.00
2003	1151	62	1023	66	252	34	217	1	22.30	96.69	98.51
2004	1254	74	1116	64	182	14	159	9	31.62	98.85	87.67
2005	1390	54	1227	109	142	15	123	4	30.51	98.79	96.46
2006	1448	28	1345	75	128	19	107	2	20.74	98.61	97.40

Notes: We define a firm as a dividend payer in year *t* if the firm pays positive dividends in year *t*. In addition, we define a firm as a new dividend payer in year *t* if the firm pays positive dividends in year *t* and paid no dividend in year *t* − 1. Further, we define a firm as an old dividend payer in year *t* if the firm pays positive dividends in year *t* and paid dividends in year *t* − 1. Moreover, we define a firm as a new list payer if the firm pays positive dividends in year *t* and was not in the sample in year *t* − 1. Furthermore, we define a firm as a nonpayer in year *t* if the firm does not pay dividends in year *t*. In addition, we define a firm as a new nonpayer if the firm paid dividends in year *t* −1 but does not pay dividends in year *t*. Further, we define a firm as an old nonpayer if the firm neither paid dividends in year *t* − 1 nor pays dividends in year *t*. Moreover, we define a firm as a new list nonpayer if the firm is a nonpayer in year *t* and the firm was not in the sample in year *t* − 1. Using these data, we construct three aggregated time-series variables following BW (2004a). First, the variable, *Initiate*$_t$ denotes the dividend initiation rate in year *t*. Second, the variable, *Continue*$_t$ expresses the rate at which firms continue paying dividends in year *t*. Third, the variable, *Listpay*$_t$ denotes the payers as a percentage of new lists in year *t*.

Table 2: Time-series determinants of dividend payments: Previous year's variables

Panel A: $Initiate_t$

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
VWP^{D-ND}_{t-1}	−6.02* [0.08]											
VW *Nonpayer E/A* $_{t-1}$		3.51 [0.15]										
VW *Payer E/A* $_{t-1}$			2.69 [0.40]									
VW *Nonpayer M/B* $_{t-1}$				7.67** [0.01]						5.46 [0.14]	4.61 [0.21]	6.70** [0.05]
VW *Payer M/B* $_{t-1}$					5.76** [0.05]					2.35 [0.47]		
VW *M/B* $_{t-1}$						6.42** [0.03]					3.29 [0.37]	
VW *Nonpayer SIZE* $_{t-1}$							3.75* [0.06]					2.12 [0.22]
VW *Payer SIZE* $_{t-1}$								4.31 [0.13]				
VW *SIZE* $_{t-1}$									4.37 [0.13]			
Tax $_{t-1}$	−2.91 [0.66]	3.74 [0.26]	1.98 [0.68]	−1.41 [0.78]	4.69* [0.10]	3.92 [0.20]	3.12 [0.34]	6.14** [0.04]	5.54** [0.05]	0.43 [0.92]	0.71 [0.87]	−1.20 [0.82]
YEAR $_{t-1}$	0.95 [0.42]	0.10 [0.89]	−0.07 [0.93]	1.10 [0.20]	0.14 [0.84]	0.35 [0.62]	−0.04 [0.94]	−0.46 [0.35]	−0.32 [0.53]	0.88 [0.29]	0.88 [0.29]	1.10 [0.23]
Obs.	20	20	20	20	20	20	20	20	20	20	20	20
Adj.R^2	0.03	−0.03	−0.05	0.24	0.19	0.23	0.06	0.12	0.12	0.22	0.23	0.24

Panel B: $Continue_t$

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VWP^{D-ND}_{t-1}	−0.32 [0.72]									
VW *Payer E/A* $_{t-1}$		0.80 [0.27]								
VW *Payer D/P* $_{t-1}$			−1.21 [0.13]							
VW *Nonpayer M/B* $_{t-1}$				1.28* [0.08]						−0.33 [0.70]
VW *Payer M/B* $_{t-1}$					1.51** [0.01]					1.71** [0.03]
VW *M/B* $_{t-1}$						1.61** [0.00]				
VW *Nonpayer SIZE* $_{t-1}$							1.18** [0.03]			
VW *Payer SIZE* $_{t-1}$								1.19** [0.02]		
VW *SIZE* $_{t-1}$									1.18** [0.02]	
Tax $_{t-1}$	1.47 [0.33]	1.25 [0.20]	1.28 [0.21]	0.94 [0.34]	2.03** [0.01]	1.83** [0.02]	1.57** [0.05]	2.44** [0.00]	2.27** [0.00]	2.29** [0.03]
YEAR $_{t-1}$	−0.24 [0.41]	−0.22 [0.14]	−0.09 [0.62]	−0.06 [0.71]	−0.18 [0.15]	−0.13 [0.28]	−0.20** [0.02]	−0.33** [0.00]	−0.30** [0.01]	−0.22 [0.26]
Obs.	20	20	20	20	20	20	20	20	20	20
Adj.R^2	0.12	0.17	0.23	0.24	0.38	0.39	0.32	0.33	0.33	0.34

Notes: Panel A of the table shows the regression results for the rates of dividend initiations, and Panel B displays the regression results for the rates of dividend continuations. All explanatory variables except Year are standardized to unit variance. The figures in [ ] are *p*-values and they are derived by the method of Newey and West (1987). Thus, they are robust to heteroskedasticity and serial correlation. ** (*) denotes the statistical significance of the coefficients at the 5% (10%) level. Further, Obs. means the number of sample and *Adj. R^2* is the adjusted *R*-squared value. Moreover, constant terms are included in our all regressions although they are not on the table.

Table 3: Time-series determinants of dividend payments: Contemporaneous variables

Panel A: $Initiate_t$												
VWP_t^{D-ND}	−4.37											
	[0.29]											
VW Nonpayer E/A$_t$		−0.38										
		[0.82]										
VW Payer E/A$_t$			5.31*							2.90		
			[0.07]							[0.18]		
VW Nonpayer M/B$_t$				7.92**						6.39**	6.06**	5.95**
				[0.01]						[0.00]	[0.01]	[0.01]
VW Payer M/B$_t$					5.92**							
					[0.02]							
VW M/B$_t$						6.24**						
						[0.02]						
VW Nonpayer SIZE$_t$							−0.56					
							[0.78]					
VW Payer SIZE$_t$								5.48**			2.71	
								[0.03]			[0.16]	
VW SIZE$_t$									5.50**			2.74
									[0.04]			[0.16]
Tax$_t$	2.94	8.02**	2.91	2.33	8.51**	7.67**	8.09**	11.07**	10.22**	0.67	5.20	4.86
	[0.59]	[0.01]	[0.49]	[0.50]	[0.00]	[0.00]	[0.01]	[0.00]	[0.00]	[0.86]	[0.16]	[0.16]
YEAR$_t$	0.11	−0.88	−0.39	0.67	−0.34	−0.17	−0.89	−0.91**	−0.75	0.62	0.28	0.34
	[0.92]	[0.17]	[0.58]	[0.37]	[0.44]	[0.73]	[0.14]	[0.05]	[0.12]	[0.37]	[0.67]	[0.59]
Obs.	20	20	20	20	20	20	20	20	20	20	20	20
Adj.R^2	0.23	0.16	0.40	0.53	0.50	0.51	0.16	0.43	0.44	0.56	0.55	0.55
Panel B: $Continue_t$												
VWP_t^{D-ND}	−0.65											
	[0.36]											
VW Payer E/A$_t$		1.87**								1.94**	2.00**	2.23**
		[0.00]								[0.00]	[0.00]	[0.00]
VW Payer D/P$_t$			−1.16**							0.26		
			[0.00]							[0.46]		
VW Nonpayer M/B$_t$				1.11*								
				[0.07]								
VW Payer M/B$_t$					1.01**						−0.20	
					[0.01]						[0.60]	
VW M/B$_t$						1.11**						
						[0.00]						
VW Nonpayer SIZE$_t$							−0.48					
							[0.21]					
VW Payer SIZE$_t$								0.93**				−0.52
								[0.03]				[0.26]
VW SIZE$_t$									1.01**			
									[0.01]			
Tax$_t$	1.62	0.60	1.90**	1.56**	2.47**	2.32**	2.48**	2.90**	2.78**	0.58	0.45	−0.04
	[0.13]	[0.25]	[0.00]	[0.33]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.29]	[0.47]	[0.96]
YEAR$_t$	−0.23	−0.21**	−0.16	−0.16	−0.29**	−0.25**	−0.41**	−0.38**	−0.36**	−0.25**	−0.22**	−0.17*
	[0.27]	[0.01]	[0.13]	[0.27]	[0.00]	[0.01]	[0.00]	[0.00]	[0.00]	[0.01]	[0.01]	[0.06]
Obs.	20	20	20	20	20	20	20	20	20	20	20	20
Adj.R^2	0.30	0.67	0.36	0.38	0.41	0.43	0.31	0.38	0.41	0.65	0.65	0.67

Notes: Panel A of the table shows the regression results for the rates of dividend initiations, and Panel B displays the regression results for the rates of dividend continuations. All explanatory variables except Year are standardized to unit variance. The figures in [ ] are *p*-values and they are derived by the method of Newey and West (1987). Thus, they are robust to heteroskedasticity and serial correlation. ** (*) denotes the statistical significance of the coefficients at the 5% (10%) level. Further, Obs. means the number of sample and *Adj. R^2* is the adjusted *R*-squared value. Moreover, constant terms are included in our all regressions although they are not on the table.

Table 4: One-year-after time-series determinants on dividend payments

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Panel A: Initiate_t											
VWP^{D-ND}_{t+1}	−5.62** [0.02]										
VW Nonpayer E/A $_{t+1}$		0.13 [0.95]									
VW Payer E/A $_{t+1}$			8.49** [0.00]							10.16** [0.00]	11.06** [0.00]
VW Nonpayer M/B $_{t+1}$				5.70* [0.06]							
VW Payer M/B $_{t+1}$					3.41 [0.23]					−2.31* [0.06]	
VW M/B $_{t+1}$						3.86 [0.18]					
VW Nonpayer SIZE $_{t+1}$							−3.97* [0.10]				
VW Payer SIZE $_{t+1}$								2.82 [0.36]			−4.32** [0.03]
VW SIZE $_{t+1}$									3.57 [0.25]		
Tax $_{t+1}$	−1.19 [0.77]	5.01 [0.16]	−3.98 [0.24]	1.05 [0.78]	5.15 [0.11]	4.62 [0.15]	6.18 [0.14]	6.16* [0.08]	5.89* [0.08]	−5.83* [0.10]	−8.44** [0.00]
YEAR $_{t+1}$	0.76 [0.32]	−0.45 [0.46]	0.20 [0.65]	0.62 [0.50]	−0.19 [0.77]	−0.07 [0.92]	−0.80 [0.23]	−0.53 [0.34]	−0.44 [0.45]	0.15 [0.76]	0.50 [0.20]
Obs.	19	19	19	19	19	19	19	19	19	19	19
Adj.R^2	0.05	−0.07	0.47	0.13	0.04	0.07	0.12	−0.01	0.02	0.46	0.52
Panel B: Continue_t											
VWP^{D-ND}_{t+1}	−2.11* [0.06]										
VW Payer E/A $_{t+1}$		1.65** [0.01]								2.53** [0.00]	2.73** [0.00]
VW Payer D/P $_{t+1}$			−1.79 [0.12]								
VW Nonpayer M/B $_{t+1}$				1.01 [0.25]							
VW Payer M/B $_{t+1}$					0.21 [0.82]					−1.22* [0.09]	
VW M/B $_{t+1}$						0.39 [0.66]					
VW Nonpayer SIZE $_{t+1}$							−0.44 [0.48]				
VW Payer SIZE $_{t+1}$								−0.05 [0.96]			−1.81** [0.01]
VW SIZE $_{t+1}$									0.24 [0.77]		
Tax $_{t+1}$	−0.94 [0.55]	−0.37 [0.78]	0.69 [0.51]	0.68 [0.63]	1.39 [0.22]	1.34 [0.25]	1.51 [0.25]	1.37 [0.23]	1.44 [0.20]	−1.35 [0.36]	−2.23* [0.09]
YEAR $_{t+1}$	0.17 [0.52]	−0.16 [0.23]	0.04 [0.88]	−0.10 [0.71]	−0.27 [0.15]	−0.25 [0.23]	−0.33** [0.05]	−0.29** [0.02]	−0.29** [0.04]	−0.19 [0.18]	−0.03 [0.81]
Obs.	19	19	19	19	19	19	19	19	19	19	19
Adj.R^2	0.27	0.33	0.24	0.13	0.05	0.07	0.08	0.05	0.05	0.41	0.49

Notes: Panel A of the table shows the regression results for the rates of dividend initiations, and Panel B displays the regression results for the rates of dividend continuations. All explanatory variables except Year are standardized to unit variance. The figures in [ ] are *p*-values and they are derived by the method of Newey and West (1987). Thus, they are robust to heteroskedasticity and serial correlation. ** (*) denotes the statistical significance of the coefficients at the 5% (10%) level. Further, Obs. means the number of sample and *Adj. R^2* is the adjusted *R*-squared value. Moreover, constant terms are included in our all regressions although they are not on the table.

Table 5: Two-year-after time-series determinants on dividend payments

Panel A: $Initiate_t$									
VWP_{t+2}^{D-ND}	4.90								
	[0.15]								
VW *Nonpayer E/A* $_{t+2}$		−0.97							
		[0.72]							
VW *Payer E/A* $_{t+2}$			4.99*						
			[0.09]						
VW *Nonpayer M/B* $_{t+2}$				−1.17					
				[0.74]					
VW *Payer M/B* $_{t+2}$					1.45				
					[0.63]				
VW *M/B* $_{t+2}$						1.43			
						[0.66]			
VW *Nonpayer SIZE* $_{t+2}$							−1.93		
							[0.51]		
VW *Payer SIZE* $_{t+2}$								1.57	
								[0.70]	
VW *SIZE* $_{t+2}$									2.11
									[0.62]
Tax $_{t+2}$	8.83	3.71	−2.71	4.39	3.37	3.16	4.12	3.85	3.60
	[0.18]	[0.25]	[0.48]	[0.34]	[0.28]	[0.32]	[0.30]	[0.26]	[0.26]
YEAR $_{t+2}$	−1.57	−0.61	−0.15	−0.72	−0.39	−0.36	−0.65	−0.55	−0.50
	[0.19]	[0.42]	[0.77]	[0.53]	[0.58]	[0.64]	[0.33]	[0.29]	[0.38]
Obs.	18	18	18	18	18	18	18	18	18
Adj.R^2	−0.04	−0.13	0.02	−0.13	−0.12	−0.12	−0.09	−0.12	−0.11
Panel B: $Continue_t$									
VWP_{t+2}^{D-ND}	1.20*								
	[0.07]								
VW *Payer E/A* $_{t+2}$		0.18							
		[0.86]							
VW *Payer D/P* $_{t+2}$			0.89						
			[0.29]						
VW *Nonpayer M/B* $_{t+2}$				−0.62					
				[0.22]					
VW *Payer M/B* $_{t+2}$					−0.13				
					[0.83]				
VW *M/B* $_{t+2}$						−0.17			
						[0.80]			
VW *Nonpayer SIZE* $_{t+2}$							−0.19		
							[0.76]		
VW *Payer SIZE* $_{t+2}$								−0.22	
								[0.78]	
VW *SIZE* $_{t+2}$									−0.11
									[0.90]
Tax $_{t+2}$	2.60**	1.08	1.70*	1.76*	1.32	1.35	1.36	1.26	1.30
	[0.02]	[0.52]	[0.08]	[0.07]	[0.16]	[0.15]	[0.13]	[0.20]	[0.17]
YEAR $_{t+2}$	−0.59**	−0.32*	−0.49**	−0.45**	−0.34**	−0.35**	−0.35**	−0.32**	−0.33**
	[0.00]	[0.07]	[0.03]	[0.02]	[0.02]	[0.03]	[0.01]	[0.01]	[0.01]
Obs.	18	18	18	18	18	18	18	18	18
Adj.R^2	0.20	0.12	0.17	0.15	0.12	0.12	0.13	0.12	0.12

Notes: Panel A of the table shows the regression results for the rates of dividend initiations, and Panel B displays the regression results for the rates of dividend continuations. All explanatory variables except Year are standardized to unit variance. The figures in [ ] are *p*-values and they are derived by the method of Newey and West (1987). Thus, they are robust to heteroskedasticity and serial correlation. ** (*) denotes the statistical significance of the coefficients at the 5% (10%) level. Further, Obs. means the number of sample and *Adj. R^2* is the adjusted *R*-squared value. Moreover, constant terms are included in our all regressions although they are not on the table.

Table 6: Three-year-after time-series determinants on dividend payments

Panel A: $Initiate_t$									
VWP^{D-ND}_{t+3}	7.33**								
	[0.02]								
VW *Nonpayer E/A* $_{t+3}$		1.77							
		[0.36]							
VW *Payer E/A* $_{t+3}$			−0.96						
			[0.67]						
VW *Nonpayer M/B* $_{t+3}$				−3.27					
				[0.26]					
VW *Payer M/B* $_{t+3}$					0.98				
					[0.79]				
VW *M/B* $_{t+3}$						0.38			
						[0.92]			
VW *Nonpayer SIZE* $_{t+3}$							1.17		
							[0.61]		
VW *Payer SIZE* $_{t+3}$								2.65	
								[0.64]	
VW *SIZE* $_{t+3}$									1.71
									[0.76]
Tax_{t+3}	11.19**	3.09	4.53	5.38	3.42	3.33	3.24	4.30	3.67
	[0.04]	[0.31]	[0.32]	[0.16]	[0.24]	[0.28]	[0.28]	[0.21]	[0.22]
$YEAR_{t+3}$	−2.45**	−0.67	−0.92	−1.36	−0.85	−0.85	−0.85	−1.08	−0.95
	[0.02]	[0.35]	[0.17]	[0.13]	[0.21]	[0.24]	[0.18]	[0.13]	[0.13]
Obs.	17	17	17	17	17	17	17	17	17
Adj.R²	0.19	−0.02	−0.05	0.01	−0.05	−0.06	−0.05	−0.03	−0.05
Panel B: $Continue_t$									
VWP^{D-ND}_{t+3}	2.30**								
	[0.00]								
VW *Payer E/A* $_{t+3}$		−0.11							
		[0.89]							
VW *Payer D/P* $_{t+3}$			0.73						
			[0.44]						
VW *Nonpayer M/B* $_{t+3}$				−1.06**					
				[0.05]					
VW *Payer M/B* $_{t+3}$					0.40				
					[0.68]				
VW *M/B* $_{t+3}$						0.27			
						[0.76]			
VW *Nonpayer SIZE* $_{t+3}$							0.49		
							[0.37]		
VW *Payer SIZE* $_{t+3}$								1.26	
								[0.40]	
VW *SIZE* $_{t+3}$									1.03
									[0.49]
Tax_{t+3}	3.30**	0.98	1.12	1.50*	0.87	0.82	0.80	1.29	1.03
	[0.00]	[0.31]	[1.54]	[0.10]	[0.34]	[0.36]	[0.41]	[0.25]	[0.29]
$YEAR_{t+3}$	−0.88**	−0.39**	−0.50**	−0.55**	−0.38**	−0.38**	−0.38**	−0.49*	−0.44**
	[0.00]	[0.02]	[0.01]	[0.00]	[0.03]	[0.03]	[0.03]	[0.06]	[0.05]
Obs.	17	17	17	17	17	17	17	17	17
Adj.R²	0.52	0.23	0.26	0.31	0.24	0.23	0.25	0.30	0.27

Notes: Panel A of the table shows the regression results for the rates of dividend initiations, and Panel B displays the regression results for the rates of dividend continuations. All explanatory variables except Year are standardized to unit variance. The figures in [ ] are *p*-values and they are derived by the method of Newey and West (1987). Thus, they are robust to heteroskedasticity and serial correlation. ** (*) denotes the statistical significance of the coefficients at the 5% (10%) level. Further, Obs. means the number of sample and *Adj. R²* is the adjusted *R*-squared value. Moreover, constant terms are included in our all regressions although they are not on the table.

5.3 Signaling Hypothesis, Earnings, and Relative Corporate Valuations

Are the dividends the signal for the future firm earnings? Alternatively, how degrees can the managers foresee the earnings condition of their own companies after their dividend policy decisions? As far as judged by our empirical results, managers can foresee the company earnings only for one year ahead for dividend continuations and for at most two years ahead for dividend initiations in Japan. Because as the results in Tables 5 and 6 show, after two and three years from their dividend policy decisions, corporate earnings are generally not statistically significantly related with the Japanese firms' dividend policies.

Further, very interestingly, one year after the nonpayers initiate dividends, their market values drop in comparison with those of nonpayers that did not initiate dividends. We understand this from the results in Table 4. More in detail, in Table 4, nonpayers' M/B ratios are statistically significantly related with the previous year's corporate dividend initiation behaviors with positive sign; however, payers' M/B ratios are not statistically significantly related with the previous year's dividend initiation behaviors. Also very interestingly, the values of payers become higher than nonpayers' after two or three years of their dividend payment decisions as the results in Tables 5 and 6 indicate. This is understood from the evidence that the dividend premium is statistically significantly positive in panel B of Table 5 and panels A and B of Table 6. The evidence means that after dividend initiations, their firm values generally decrease. In addition, after their dividend initiations or continuations, strong earnings do not continue so long in Japan, against the suggestions of the signaling hypothesis of dividend policy.

6. Summary and Conclusions

This paper explored the determinants of dividend initiations and continuations from the perspectives of our new hypothesis, the market valuation hypothesis of dividend policy. In our empirical analysis, we also considered the catering theory and the signaling hypothesis in Japan. After several empirical tests, this study found new numerous matters as follows.

- First, in contrast to the US case, with respect to the dividend initiations, dividend premium is neither the determinant of one-year-ahead dividend initiations nor the contemporaneous determinant of the dividend initiations for the Japanese firms. These are new results derived from our study.

- Second, also in contrast to the case in the US, dividend premium is neither the determinant of one-year-ahead dividend continuations nor the contemporaneous determinant of the dividend continuations for the Japanese firms. These are also the new findings of our study.

- Third, our empirical analysis newly found that the strong determinants of the Japanese firms' dividend initiations are the nonpayers' same year's and previous year's M/Bs. These results clearly support our market valuation hypothesis of dividend policy in Japan.

- Fourth, similarly, we also revealed that the payers' same year's and previous year's M/Bs are the strong determinants of the Japanese firms' dividend continuations. These results also support our market valuation hypothesis of dividend policy in Japan. These findings related to M/Bs demonstrate the novel contributions of our study.

- Fifth, our empirical results indicated that, the Japanese corporate managers could foresee their own firms' earnings for at most two years ahead. Our results also implied that, after two and three years from their dividend policy decisions, their conditions of corporate earnings become worse in general. We consider that these may not support the traditional signaling hypothesis of dividend policy.

- Sixth, we also found that, one year after the nonpayers initiate dividends, their market values drop in comparison with those of nonpayers that did not initiate dividends. Also very interestingly, the values of payers become higher than nonpayers after two or three years of their dividend payment decisions. These tendencies after their dividend policy decisions of the Japanese firms are also new findings from our comprehensive empirical studies.

- Seventh, our data analysis indicated that, for almost 15 years after 1992, the dividend premium in Japan is continuously in plus. Hence, as BW (2004a) suggested, dividend-paying shares are generally more highly valued in the Japanese capital markets. This empirical confirmation by the Japanese data is also one of our contributions in this study.

As above, the new evidence derived in this paper contributes to the highly important issue of dividend policy in the field of corporate finance. Future related academic studies using other countries' datasets will be also valuable. These studies may lead to the worldwide conclusions, and these may be our future tasks.

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