

The Effect of Dividend Initiation on Shortrun Return in Indonesia Stock Market: An Event Study with Propensity Score Matching Approach

Bambang Sugeng¹

¹ Faculty of Economics, State University of Malang, Indonesia

Correspondence: Bambang Sugeng, Jurusan Akuntansi, Fakultas Ekonomi, Universitas Negeri Malang, Malang (65145), Jawa Timur, Indonesia. E-mail: bbsg63@gmail.com

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Abstract

Dividend initiation policy offers a relatively unique practical and conceptual characteristics compared to those of regular dividend. This study aims at investigating whether initial dividend policy of Indonesian firms affects short-run stock return, while further exploring the implementation of a new event study approach, *propensity score matching*, as an experimental-like design. This approach is based on actual rather than estimated abnormal return commonly used in traditional approach. Applying this new approach, this study found no significant abnormal returns around dividend initiation announcement by firms listed in Indonesia Stock Exchange. The findings imply that the dividend initiation behavior of Indonesian firms is proved not fully to follow the theoretical framework of signaling model, a dividend model which is basically developed primarily based on regular dividend behavior. The results partly contradict those findings mostly resulted from researchs conducted in advanced market context but seem to support contextuality argument of dividend policy. From methodological perspective, this study identified that the use of propensity score matching approach needs a large number of firms from which control firms are selected, accordingly the study conducted in market with limited number of listed firms such as in Indonesia could generates selection problem of control firms that optimally match treated firms.

Keywords: dividend initiation, signaling theory, propensity score matching

1. Introduction

Signaling model is one of the main theoretical explanatory models of dividend policy under the framework of the relevance of dividend proposition. Signaling model of dividend developed by Merton Miller and Modigliani (1961), Bhattacharya (1979), John and Williams (1985), and Miller and Rock (1985), builds upon the framework of asymmetric information. This model explains that the managers as corporate insiders use dividend policy as a means to provide a signal to the investors or market about private information associated with the prospects of the firm's performance. Therefore, according to the model, dividend policy taken by manager provides indication about the prospects of the firm's performance to the market.

Accordingly, when the company announces a dividend or change in dividend, investors will perceive the announcement as an indication of the company's future performance or profitability. With such arguments, Merton Miller and Modigliani (MM) (1961) claimed that the investor reaction to changes in the dividend policy is not caused by investor's preference to dividends rather than capital gain but is caused more by information content carried by the dividend announcement. This means that expectation about the firm's performance rather than the amount of the dividend itself causing investors to make corrections to the firm's stock price. Therefore, as argued by Sharma (2001) if the argument of MM is true that the dividend policy is an indicator of the company's future performance instead of the preference of investors on dividends than capital gain, a credible increase in dividend payout should be followed by an increase in performance indicator such as profitability, earnings, sales growth, and other performance indicators. In other words, the signaling effect arises if the firm makes changes to the dividend policy as a result of the changes in expectation of firm's economic conditions.

Based on the above arguments, empirical testing of signaling model of dividend can be done in two ways. First, by looking at the market reaction to the change in dividend policy (market-based), and second, by addressing the

trend of the performance of the company following the announcement of the dividend (company-based). The first approach departs from the hypothesis that if the dividend gives a signal about the prospects of the company's performance, with the assumption of an efficient market, the increase (decrease) in dividends would be reacted positively (negatively) by market. While the second approach departs from the hypothesis that if the dividend provides signal about the prospects of the company's performance, an increase (decrease) in dividends would be followed by an increase (decrease) in company's performance indicators such as profitability, earnings, and sales growth.

Research findings on the relevance of dividend policy to the firm value or stock price is still claimed as a controversial issue and therefore becoming dividend as a puzzle (Black, 1996; Baker, Powel, & Veit, 2002). The condition was triggered in part by the inconsistency of findings on the issue that are in general obtained from research employing conventional event study design. Cheng (2003) and some other researchers identified that inconsistency of research findings about the consequences of dividend policy on stock prices and the company's performance, so far, could be due to the use of research designs and approaches that are less justifiable (Note 1).

So far, examination of the effect of an event (event study) is commonly conducted using estimated abnormal returns or market model-based approach. This method of testing the impact of events was carried out by analyzing the cross sectional abnormal returns in the period around the event (event window). The salient shortcoming of this approach lies on the market model used to estimate the abnormal return, such as the single factor market model or constant model, CAPM, and multi-factor model (Cheng, 2003). All such estimation models use beta as the main determinant of expected/ normal return. Beta is an indicator of risk which has quite significant limitations as it is influenced by the estimation period where different estimation periods tend to result in different betas. Fama and French (1992) concluded that beta in the CAPM model does not predict cross-section stock returns. In addition, the expected return and beta are very sensitive to the choice of the portfolio. They also argue that the constant term in the market models is also biased because the macroeconomic environment during normal return estimation period may be different from the post-event period. As such, the normal return estimates using conventional event study is biased.

Fama and French (1992) argued that there are many potential factors in addition to beta, which are also considered to influence the stock returns. Several firm characteristics, such as firm size, market to book ratio, and leverage, are thought as part of these factors. The use of cross section data of return without accomodating these characteristics may generate an acute selection bias. In addition, the use of limited risk factors to estimate abnormal return leads the factor model approaches tend to be misspecified (Kothari and Warner (1997), Daniel and Titman (1997), and Jegadeesh (2000). Loughran and Ritter (1995) suggested that the multi-factor model shows a lower ability in detecting abnormal returns. Fama and French (1992) recommended that future research needs to involve more factors and variables of firm characteristics to build the more representative estimation model of return.

Considering the weakness of factor model approach pointed out above, researchers start trying to adopt a matching approach to examine the impact of events on stock return. Matching approach involves dividing the cases into two groups e.i. treatment group and control group. Both groups are matched based on multiple variables of firm characteristics called covariates. The matching procedure generates several matched subgroups using firm characteristics as the basis for matching. Theoretically the more firm characteristics or covariates used in this approach the more subgroups of sample is required and also leading the procedure to become more complex.

According to the conventional event study design, the examination of impact of the event (corporate actions) on stock return is conducted by testing the significance of abnormal returns around the date of the event. On the other side, the matching approach tests the event effect on stock return by comparing actual return of the treatment group with one of the control group around the event. Thus, the test does not need to use estimated abnormal return as in factor model approach. The difference between treatment group and control group actual return is considered as abnormal returns arising from the event being tested.

However, although the results of such an approach is claimed to be more stable than the factor model (Barber & Lyon, 1997), standard matching approach is only suitable for a small number, perhaps ideally no more than two variables of firm characteristics used as the basis for matching. When the matching involves more variables it is unlikely that standard matching approach could be used for developing multidimensional sub-groups. With more and more variables of firm characteristics involved, standard matching approach deals with the issue of multi-dimensionality called "curse of dimensionality." The inability of this approach brings more covariates in testing the effect of event on stock return, is also thought to have contribution to the research finding

inconsistency of the issue (Cheng, 2003).

Based on limitations of the two previous approaches, researchers are beginning to adopt a new approach supposed to be able to overcome the curse of dimensionality problem faced by standard matching approach. Thus it enables event study conducted multidimensionally, involving more variables of firm characteristics simultaneously. The approach is called *Propensity Score Matching* abbreviated as PSM and was first developed by Rosenbaum and Rubin (1983). In finance discipline, PSM is thought as a new approach of event study as an effort to improve the previous (traditional) approaches i.e. factor models and standard matching. PSM approach is able to control the presence of confounding factors better than previous approaches and minimize the impact bias of event being examined. Wang (2005) in his research concluded that PSM as a better approach to measuring the event effect and is suitable for testing stock performance for longer period after the event, because previous approaches do not work well for a longer period of stock performance. In addition, he also argued that the rationale underlying some event study approaches indicates that the propensity score matching more outperforms.

2. Research Objective

By implementing a new event study approach, propensity score matching, this research is intended to investigate the signaling effect of one of dividend policy types, dividend initiation policy. This research was conducted by examining the significance of abnormal return around the announcement date of dividend initiation made by firms listed in the Indonesia Stock Exchange which is categorized as one of emerging capital markets. Black (1976) found evidence indicating that there was a substantial differences in dividend policy taken by firms in advanced market and that taken by firms in emerging market such as in Indonesia. Relevant to Black's finding, Frankfurter and Wood (2002) firmly claimed that there is no single model of dividend policy that applies to all contexts.

The previous study also conducted by the author found that almost all companies listed in Indonesia Stock Exchange initiated their regular dividend in the first year after their Initial Public Offering (IPO) (Sugeng, 2005). This dividend initiation behavior is more likely contradictive to that in developed countries like United States as indicated in Jain, Shekhar, and Torbey (2003). Therefore, dividend initiation policy taken by Indonesian firms offers challenging phenomenon interesting to be studied empirically, in order to strengthen the empirical explanation of dividend policy behavior particularly in the emerging capital markets context. In terms of methodological issue, in my observations, this research is considered as the first event study in Indonesia that applying the new approach of event study, PSM approach. Upon such objectives, the value of this research lies on the followings.

Firstly, event study investigating informational effect of corporate actions including dividend policy traditionally employs estimated abnormal return approach characterized with some widely known limitations. This research introduces further the implementation of a new approach to event study as an improvement of the traditional ones.

Secondly, researchs in finance particularly those addressing dividend policy tend to place their focus more on regular dividend issues, there is still smaller number of them addressing issues on dividend initiation that offer a relatively unique practical and conceptual characteristics compared to those of regular dividend. Along side this, this research conducted in emerging capital market context provides comparable empirical explanation with those conducted in advanced capital market that tend to dominate the existing research findings on dividend issues.

The next section of this article is organized as follows. First, review of the literature underlying the research problem along with the development of hypotheses. Second, discussion of methodological aspect of this research stressing more on discussion of the technical aspect of propensity score matching approach. Third, presentation of the research findings and their discussion, and finally this article will be ended with conclusions and implications of the findings.

3. Literature Review and Hypothesis

Dividend initiation policy is one of dividend policy types which is important to be examined within the framework of signaling theory. Dividend initiation policy is the manager's decision to initiate or start paying regular or periodical dividends. Dividend initiation is basically the first dividend payment made by firm after initial public offering (Bullan, Subramanian, & Tanlu, 2003). Sharma (2001) suggested that dividend initiation is the first public indication of the willingness of managers to distribute excess cash to shareholders rather than to invest in new projects. In addition, Dhaliwal, Li, and Trezevant (2003) also stated that by conducting regular

dividend initiation, the manager wants to demonstrate its commitment to shareholders to consistently perform further cash distribution in the form of regular dividends for an unlimited periods. I identify that the specificity of dividend initiation policy compared to that of periodic or regular dividend can be viewed mainly from two strategic perspectives of the policy. First, the payout perspective which is associated with how manager sets the amount of the dividend as the initial dividend payout. Second, the timing perspective that is when the company should decide to initiate dividend to shareholders after going public.

Payout determination of initial dividend is the first crucial problems faced by managers in making decisions about the dividend initiation. The amount of initial dividend payout set by manager will affect the magnitude of future regular dividend payout with the assumption that the manager has a preference to maintain the consistency and stability of the subsequent regular dividends. This managers' preference has already been indicated in the empirical findings by Lintner (1956) that was also supported by many other subsequent research findings. The findings indicate that managers tend to avoid a decline in dividends because it could destroy their reputation before the investors. Managers also prefer to pay a stable dividend and tend to avoid an increase in the dividend payout to a certain level that likely can not be maintained in the future periods due to lack of firm's performance and profitability prospect. Managers do so because they believe that shareholders prefer a stable and smooth dividend flow rather than a fluctuating dividend.

The above assumptions underly the reason for managers not to decide to initiate dividend if consistency or stability of future regular dividend already initiated has likely no guarantee to be maintained because of uncertain financial support of the company. Stability means there is a consistency in dividend payment including prevention of the dividend stream from any payout decrease or cut in particular periods. With this assumption, I argue that manager would be willing to pay a higher payout for the initial dividend if he believes that the prospect of firm's performance is safe enough to maintain the payout in the future. Inversely, manager with low prospect of firm's performance will avoid having to pay first dividend with high payout because it has a greater risk not to be sustained and this may destroy the dividend stability in future periods. Thus, with such arguments, it could be implied that the magnitude of the initial dividend payout will provide a signal about the status of the future company's performance after the initiation of dividend.

The second strategic perspective of dividend initiation policy is associated with the timing decision of the dividend. Dividend initiation undertaken by firm indicates the firm's commitment to begin paying dividends periodically in a regular manner for infinite periods in the future. The timing or when the company decided to distribute its first dividend after going public is also considered as a very crucial strategic issue. The manager's decision to initiate dividend with all its consequences, especially associated with the firm responsibility to consistently pay regular periodic dividend, is strongly related to the financial readiness of the firm that need supporting from firm future performance. Timing of when the firm is willing to start paying its first dividend with a certain payout, reflects when the company is financially ready to realize its commitment to pay regular dividend consistently including maintaining dividend payout commitment. Companies that decide to immediately start paying its first dividends with certain dividend payout could be interpreted as a manifestation of their confidence in the firm's future performance after initiating dividend, otherwise, the dividend payout that has been initiated will be potentially unsustainable, which in turn, may damage management reputation. This means that companies with weaker performance prospect should not initiate their regular dividend after their initial public offering as immediate as those with stronger performance prospect, considering the consequences to retain their first payout in the future.

In the light of such assumption, I would like to suggest that companies initiating their dividend with a particular payout indicates their stronger confidence on their future performance prospects relative to those that do not initiate dividend. Hence the company's decision to initiate a dividend with a certain amount or payout gives a signal about the prospects of the company's financial performance after dividend initiation. Nevertheless, underperformed firms may make a pragmatical decision to pay dividend since as suggested by Viswanath, Kim, and Pandit (2002) that in a context where investors assume that dividends are informative then the underperformed companies would be willing to pay higher dividends due to the benefits might be gained in terms of share price revaluation. Such fictitious measure by underperformed firms could destroy signaling value of dividend. In the light of this phenomena, Sharma (2001) argues that the signal from the dividend policy adopted by the company is credible if companies with inferior prospects can not replicate the measures taken by the company that have strong prospects.

Based on the signaling arguments framework of both strategic aspects of dividend initiation, i.e. payout and timing, I propose that investors will more appreciate those firms that decide to initiate their regular dividend relative to those that do not. Accordingly, it could be hypothesized:

There would be positive abnormal returns around the announcement of the post IPO dividend initiation by companies listed in the Indonesia Stock Exchange.

There are several previous empirical evidences associated with the timing aspect of dividend initiation. Jain et al. (2003) found that most companies who decide to go public are in early phase of their growth and in industry that is experiencing rapid growth. Given in the growth phase larger amount of funds is required to finance investment opportunities, companies in developed countries tend not to initiate dividend in the early years or immediately after their IPO. Sharma (2001), based on a sample taken from CRSP, found evidence that the company decides to initiate its dividend in the period in which the profitability and other performance indicators is in the best position. When managers see the prospects of the company (profitability and growth) are rising and sustainable, so they decided to initiate dividend. They wait for the right opportunity to announce the initiation of dividend, which is when there are high cash flow and strong profitability. The same evidence was also found by Bullan et al. (2003) with samples taken from the combined database CRSP-COMPUSTAT and conclude that the company decided to initiate dividend when it experienced a high level and stable profitability and when the market sentiment leading to a dividend premium, meaning that market is appreciating dividend than non dividend.

A relatively contradictive behavior of initiation dividend policy was found in Indonesia since approximately 95% (almost entirely) of firms listed in the Indonesia Stock Exchange initiated their regular dividend in the first year after their initial public offering (Sugeng, 2005). On the other hand, Jain et al. (2003) reported in their study that there was only approximately 6.08% of the company in the United States that initiated their regular dividend in a range of 10 years post IPO. Most companies initiated their dividend more than 10 years post IPO. This fact shows that only insignificant amount of companies in the United States decided to initiate their dividend in the early years after their status as the going public firm. The conclusion from findings generated from researchs conducted in the United States indicates that the company is, in fact, waiting for the moment deemed appropriate for deciding to initiate dividend. The moment is that when the company's financial condition as reflected by the financial performance and stock market conditions support and is favorable for the decision. The evidences supporting this conclusion were found in Sharma (2001), Dhaliwal et al. (2003), Bullan et al. (2003), and Jain et al. (2003).

In addition, some empirical evidences associated with market response to dividend initiation policy in developed countries were documented by Asquith and Mullins (1983) who found that there was cumulative excess return over 2 days around announcement date of dividend initiation. Besides, the amount of cumulative excess return was proven to have positive relationship with initial dividend payout. But as many as 30% of the companies surveyed experienced a negative response from the market. Healy and Palepu (1988) proved the existence of significant positive effect of dividend initiation on stock returns. They also found that the company that initiated dividend showed an increase of earning at least one period before and after the initiation of the dividend. Mickaely, Thaler, and Womack (1995) examined the short-term impact of dividend initiation on stock returns and reported the excess return over the three days around the announcement date. Furthermore, Jin (2000) reported that the majority of companies being examined showing that their dividend initiation policy gained positive response from the market and enhance firm value, while others obtain a negative response and therefore the initiation of dividend policy decreases the firm value. Based on these findings it might be stated that companies should not always assume that initiation of dividend policy can improve firm value. Other studies reporting the presence of short-term positive reaction from market to dividend initiation were performed by Taranto (2002), Kosedag and Michayluk (2000), while significant long-term positive reaction reported by Boehme and Sorescu (2002).

On the other side, the initiation of dividend policy behavior among going public companies in Indonesia as described previously seems very contradictive to their counterparts in the developed countries like United States. Such behavior raises a fundametal questions especially from the perspective of signaling argument that needs to be clarified empirically: Is the dividend initiation policy among companies listed in the Indonesian capital market credible from the perspective of signaling theory? In a sense, whether the initiation of dividend policy credibly indicates prospects of the company's performance in the future and market reacts positively to the policy.

As partly indicated in some empirical finding pointed out above, It could be argued that although signaling model explanation on the behavior of dividend initiation policy is theoretically very convincing, but the evidence produced is not fully sufficient to support the theoretical argument. Although some evidences pointed out previously support the argument, several researchs aslso reported contradictive results. Jain et al. (2003), Sharma (2001), and Bullan et al. (2003) provide evidence that in generall company's performance in the period after dividend initiation shows a decreasing trend, even though their performance in the period prior to the

initiation of dividend proved to be better than those who did not initiate dividend. This suggests that previous research has still not firmly established that dividend initiation policy conveys a credible information content about the prospects of the company's performance as predicted in signaling models.

4. Research Method

To test the hypothesis, this research applies event study design with propensity score matching (PSM) approach. This approach involves several procedures that are relatively different from traditional event study as pointed out as follows.

4.1 Matching Procedure

PSM is regarded as a new alternative to traditional event study approaches in examining the information content (signaling effect) of an event e.g. corporate actions. With this approach the study resembles experimental research design but with observational data (secondary data). Basic matching procedure required for implementing propensity score matching approach is as follows.

By using design resembling experimental study, abnormal return generated around dividend announcement date by the group of companies that initiate dividend (treatment group) is assumed as a result of treatment (treatment effect). Using notation as also used in Cheng (2003), we suppose R_{i1l} is the actual stock returns during the period l of the companies included in the treatment group (dummy category 1), a group of companies that initiate their dividend. R_{i0l} is the actual stock returns during the period l of the companies included in the control group (dummy category 0), a group of companies that do not perform dividend initiation. Thus, the treatment effect of dividend initiation announcements on stock returns i can be determined by $R_{i1l} - R_{i0l}$. Where $R_{i1l} - R_{i0l}$ is abnormal return expected to rise as a result of dividend initiation announcement.

Suppose the group of companies that perform dividend initiation announcement (the treatment group) is categorized as $S_i = 1$ and the group of companies that do not initiate dividend (the control group) is $S_i = 0$, then the expected impact of the dividend announcement on stock returns (treatment effect) can be determined by the following equation.

$$\Delta | S=1 = E(R_{i1l} | S_i = 1) - E(R_{i0l} | S_i = 0) \quad (1)$$

Where $E(R_{i1l} | S_i = 1)$ is the average actual return over the period l of the company's stocks i conducting dividend initiation announcement (1), while $E(R_{i0l} | S_i = 0)$ is the average actual return over the period l of the company's stocks i that do not announce dividend initiation (0).

The problems that arise with equation (1) is if the placement of firm into the treatment group ($S_i = 1$) and the control group ($S_i = 0$) is not random then $S_i = 1$ is not the same as $S_i = 0$, so $\Delta | S=1$ generates biased estimator of the expected treatment effect. However, as also stated by Rubin (1977), the expected effects of treatment could still be estimated if the placement into the treatment group (the companies that initiate dividend) and control group (companies that do not initiate dividend) is performed based on multiple observed variables other than treatment variable, which are also considered to affect the treatment effect. This kind of variables is called confounders or covariates derived from several firm characteristic variables. In other words, placing the company into the treatment group and control group should be matched by firm characteristics variables (X_i), which act as covariates. With these matching procedures, the expected treatment effect, $\Delta | S = 1$, is conditional on several firm characteristic variables.

$$\Delta | S=1 = E(R_{i1l} | X_i, S_i = 1) - E(R_{i0l} | X_i, S_i = 0) \quad (2)$$

Such placements of cases with matching procedure is assumed equivalent with random placement since the matching process used as the basis for placement ensures both groups have the same distribution of covariates. When both groups have the same distribution of covariates, then the expected treatment effect could be determined simply by comparing the average result or mean difference of the results of treatment group and that of control group (Acharya, 2012).

The criteria used to identify firm characteristic variables as covariates is that the variables are assumed to influence both treatment variable and treatment effects. For example, to test the impact of seasoned equity offering to the long-term return, Cheng (2003) used several firm characteristic variables consisting of industry, issue year, return on assets, leverage, size, research and development expenses, book-to-market, sales, trading system, and momentum. Wang (2005) used beta, size, leverage, market to book ratio, earnings to price ratio, and industry variables, as covariates in examining the impact of dividend initiation announcement of the return in the American capital market. While Atacharya (2012) used size, book to market ratio, momentum, leverage, ROA, cash, and total sales to total assets ratio, as the firm characteristic variables to test the impact of stock repurchase

on the long-run returns.

4.2 Propensity Score Matching

The underlying logic of this approach is elaborated in Rosenbaum and Rubin (1983). In order for the testing of the causal effect with observational data (secondary data) resembles the experimental design, the placement of firm into the treatment group and control group is conducted through matching mechanism based on some firm characteristic variables (X) as independent variables. Let $P(X)$ is the probability of a firm i to become member of the treatment group (group of firms that initiate dividend) which is conditional to a series of characteristic variable X , then $P(X)$ is a propensity score. This propensity score is basically a probability of a firm to be placed into the treatment group or probability of a firm to initiate dividend.

As argued by Rosenbaum and Rubin (1983), if the results of control group are independent on the mechanism of placement of firm into the treatment group which is conditional on variable X , then the results of the control group are also independent on the mechanism of placement of firm into the treatment group which is conditional on $P(X)$. Thus, the matching between the treatment group and the control group could be based on placement probability value or $P(X)$ rather than placement directly based on the value of variable X , where X is the vector of firm characteristic variables. By such mechanism, the expected effect of treatment is no longer solely conditional on the value of X as in equation (2) but is also conditional on $P(X)$, so that equation of expected treatment effects could be further formulated as follows.

$$\Delta \Big|_{S=1} = E(R_{i1} \Big| P(X_i), S_i=1) - E(R_{i0} \Big| P(X_i), S_i=0) \quad (3)$$

Based on the propensity score theorem, determining the control firms which are matched with firms that received treatment (treatment firms) based on a series of characteristic variables is equivalent to that based on the probability of a firm to receive treatment that is conditional on the series of characteristic variables or $P(X_i) = \Pr(S = 1 \Big| X_i)$ (Cheng, 2003). With this approach, firms of treatment group and firms of control group are matched simultaneously based on propensity score which is estimated using characteristic variable vector or $\Pr(S = 1 \Big| X_i)$. On this basis, propensity score matching is an approach that can solve problem of multidimensionality in the process of matching. Propensity score was estimated using logistic regression.

Based on the logic of propensity score matching approach pointed out above and also referring to that performed by Cheng (2003), the steps to examine the effect of dividend initiation announcement on stock returns (treatment effect), are outlined as follows.

Step 1: determine the firm characteristic variables (covariates) as the basis for classifying firms into the treatment group and control group.

Step 2: using a logistic regression model, estimate the probability of the firms to initiate dividend based on characteristic variables determined in Step 1 as independent variables.

Step 3: make prediction using logistic model generated in Step 2, to determine the probability score (propensity score) of a firm to initiate dividend, for all sample firms either those that initiate dividend or those that do not.

Step 4: perform matching process to select a firm that does not initiate dividend to be paired with each firm that initiates dividend, based on propensity score generated in Step 3. Non dividend firm is matched with dividend firm whose similar or approximately similar propensity score. Matching is done using one of matching methods available in PSM approach and the most recommended, the "nearest-neighbor-match ." The matching process involving Step 2-4 is carried out using a free and open statistical software package "R" with "MatchIt" program.

Step 5: calculate the daily stock returns during the event window period of dividend initiation announcement of both firms in the treatment group and control group. Then, statistically test the significance of mean difference of return between treatment group and control group to test the effect of treatment (dividend initiation announcement).

4.3 Characteristic Variables

To serves as confounding and matching variables, the firm characteristic variables should meet the requirement that these variables are considered influential on the treatment effect as well as on treatment variable. In the context of dividend initiation as treatment variable, Thakor (2015) found that some variables like profitability, assets in place, and managerial ownership, were proven to affect the company's decision to initiate dividend. Sharma (2001) also reported that size, leverage, and capital expenditure, were significantly influence the decision of dividend initiation. Hameed and Xie (2015) documented that size, book to market ratio, stock return, institutional ownership, ROA, and leverage, as determinants of dividend initiation decision. Wang (2005) used such variables as beta, size, leverage, market to book ratio, price-earnings ratio, and industry, as firm

characteristic variables to test the impact of dividend initiation announcement on the long-run returns. While in the context of the treatment effect (stock returns), Fama and French (1992) claimed that firm size, leverage, book-to-market ratio, and earnings-to-price ratio are variables that can explain well the stock returns.

This study uses several firm characteristic variables that were also used by most previous researchers that qualify as matching variables (covariates). These variables include firm size, leverage, book-to-market ratio, and earnings-to-price ratio. Thus, the logistic model used to predict the propensity score that serves as the basis for the placement of firms into treatment group and control group as follows.

$$D_{it} = \alpha + \beta_1 SIZE_{it} + \beta_2 LEV_{it} + \beta_3 MTB_{it} + \beta_4 PER_{it} + \varepsilon_{it} \quad (4)$$

Where,

D_{it} = propensity score of each firm

$SIZE_{it}$ = firm size measured using *natural log* of firm total asset.

LEV_{it} = leverage measured with total debt to total asset ratio.

MTB_{it} = market to book ratio, the ratio of total market to book value of asset.

PER_{it} = price to earning ratio which is the ratio of current stock price to earning per share.

4.4 Sample and Data

The sample used in this research consists of firms listed in the Indonesia Stock Exchange (IDX) that initiate their dividend in the period range of 2001- 2014 and comprising all types of industry since the total number of firms listed in IDX, currently 592 firms, is still quite limited compared to that in developed countries. During the sample period, there were 148 firms that initiated dividend and all derived from those that made an initial public offering (IPO) in the sample period range. Companies included in the sample should meet the criteria that they provide all data required in this study. In order for return data is not contaminated by other corporate actions effect, the firms selected did not conduct significant corporate actions other than dividend initiation for one month before and after dividend announcement date. Of the 592 firms, there were 565 firms met these criteria, consisting of 136 companies initiating dividend and were treated as treatment group members, while the remaining 429 companies that did not initiate dividend were treated as candidate of control group members. Of this 429 firms, 136 firms were selected to be partner firms (matched firms) of each of dividend initiating firms in the treatment group, using matching procedure. As mentioned previously, the matching was conducted using “nearest-neighbor-match” method with a ratio of 1:1. Under this ratio, each of dividend initiating firm in the treatment group was paired with a non dividend initiating firm in the control group.

Data of firm characteristic variables were taken from the company’s financial statements for the period of one year prior to the year of dividend initiation announcement. While the stock return data was taken for the event window period of 5 days around the date of the dividend initiation announcement. Beside for the window period of 5 days, the significance of abnormal returns were also tested for an extended period of 3 days from the original window which is intended to see the treatment effect for longer short term period. With this extension, the overall observation period covers 2 days before, the day at, and 5 days after, announcement date. The data was obtained from printed documents such as Indonesian Capital Market Directory (ICMD) and the Indonesia Stock Exchange website.

4.5 Matching Results

After estimating logistic regression model (Equation 4) involving firm characteristic variables i.e. firm size, leverage, market to book ratio and price earning ratio, of all firms (565 firms), the propensity score for each firm was then predicted using the estimated logistic regression. Based on predicted propensity score, 136 firms were selected from 429 non dividend initiating-firms to be the pairs of 136 dividend initiating-firms. However, after the initial matching process, some extreme data (outliers) was found causing the firms placed into either treatment or control group were not matched well. This leads to data trimming to improve matching quality. As the result of data trimming and withdrawal of several firms from sample that were found to raise corporate actions other than dividend initiation during the observed period, the number of matched firms eventually decreased to consists of 126 pairs. Nevertheless, this procedure results in both groups to become well matched. Table 1 presents the summary of balance for all data which is the original data of each firm characteristic variable for both treatment and control groups before matching. The results of matching analysis are presented in Table 2 and Table 3. Table 2 presents summary of balance for matched data that is the data of each firm characteristic variable for both treatment and control groups after matching.

Table 1. Summary of firm characteristic variables data before matching

Variables	Means of Treatment Group	Means of Control Group	Mean Difference
SIZE	13.9245	14.0621	-0.1376
PER	26.3161	20.1487	76.1675
PBV	2.6829	2.2896	0.3933
LEV	0.4413	0.5532	-0.1119

Table 2. Summary of firm characteristic variables data after matching

Variables	Means of Treatment Group	Means of Control Group	Mean Difference
SIZE	13.9245	14.0297	-0.1052
PER	26.3161	26.5790	-0.2629
PBV	2.6829	2.8989	-0.2160
LEV	0.4413	0.4445	-0.0032

Comparing data presented in Table 1 (before matching) with that in Table 2 (after matching), it appears that the matching procedure produces pairs of firm with mean value of each characteristic variable approximately similar between two groups and resulted in means difference of each variable that is much smaller (Table 2) than that before matching (Table 1). For instance, before matching (Table 1), the mean of leverage (LEV) for non-dividend initiation group (control group) and dividend initiation group (treatment group) is 0.4413 and 0.5532 respectively with the mean difference of -0.1119. After matching (Table 2), the mean value of the variable (LEV) is almost the same, namely 0.4413 and 0.4445 with the mean difference which is much smaller -0.0032. This result also applies to all other firm characteristic variables (SIZE, PER, PBV). This matching procedure is claimed to generate a well matched pairs between treatment and control group members. The summary of sample size as a result of matching process is presented in Table 3.

Table 3. Summary of sample size

	Control Group	Treatment Group
All	423	126
Matched	126	126
Unmatched	297	0
Discarded	0	0

As shown in Table 3, the final sample size generated from matching procedure is 126 pairs of firm. This means that the matching procedure results in 297 out of 423 non-dividend initiating firms were unmatched and failed to become paired firms. While the distribution of propensity score of the two groups is visualized in terms of histogram and jitter plots in Figure 1 and Figure 2 respectively.

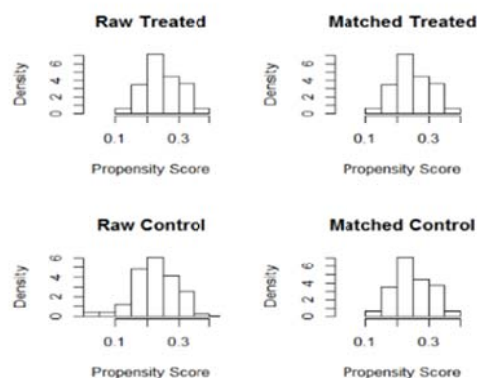


Figure 1. Distribution of propensity score before and after matching

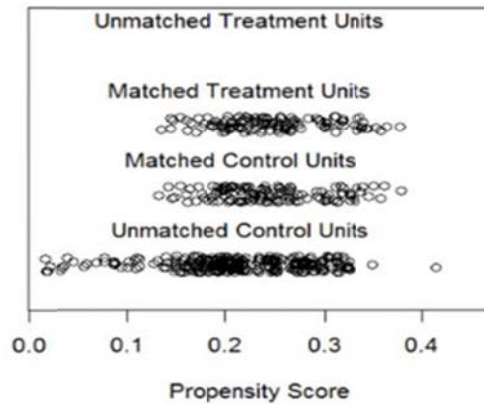


Figure 2. Distribution of propensity score

Both visuals show that the distribution of propensity score after matching between the two groups (treatment and control) is identical proving that both groups are well matched.

4.6 Return Data

The descriptive of cumulative return in the observed period (event window) is presented in Table 4. ‘INIT5’ and ‘INIT8’ represent observation period of 5 days and 8 days respectively for dividend initiating firms (treatment group), while ‘NonINIT5’ and ‘NonINIT8’ represent observation period of 5 days and 8 days respectively for non-dividend initiating firms (control group). The average cumulative return during the observed period is presented in the table under the ‘Mean’ column. The average cumulative abnormal return (CAR) is then determined by the difference between average cumulative return of treatment group and that of control group. An average cumulative abnormal return obtained from this way is -0.003697848 for 5 days observation period and -0.002434827 for 8 days.

Table 4. Descriptive statistic of cummulative return

	N	Minimum	Maximum	Mean	Std. Deviation
INIT5	126	-.210000	.211828	.00438251	.066770627
NonINIT5	126	-.287555	.309524	.00808036	.082756604
INIT8	126	-.340734	.212333	.00086695	.083651024
NonINIT8	126	-.787039	.401956	.00330178	.109472913

5. Findings And Discussion

To test the significant existence of treatment effect (dividend initiation effect), the statistical test of mean difference was conducted to the average return of both groups. From normality test of data using Kolmogorov-Smirnov, it was found that cumulative return of each group for each observation period was not normally distributed. Accordingly, the null hypothesis was tested using Wilcoxon Signed Rank Test, a nonparametric statistical test of mean difference for two paired sample groups. Table 5 presents the result of this test.

Table 5. Statistical test of the treatment effect

Null Hypothesis	Test	Sig.	Decision
The median of differences between INIT5 and NonINIT5 equals 0	Related- Samples Signed Rank Test	Wilcoxon .763	Retain the null hypothesis
The median of differences between INIT8 and NonINIT8 equals 0	Related- Samples Signed Rank Test	Wilcoxon .940	Retain the null hypothesis

The results indicate that the test fails to reject the null hypothesis for both observation periods. Thus, it is concluded that there is no significant abnormal return (treatment effect) during observation period either for 5 days or 8 days around the announcement of dividend initiation.

Based on the result of this event study using propensity score matching approach, a novel approach in event study, this study proves that dividend initiation policy undertaken by firms listed on the Indonesia Stock Exchange (IDX) does not affect the short-term stock returns. Basically, this result is not too surprising since they are actually still in line with the previous findings of the study also conducted by the author. The previous study found that the dividend initiation conducted by almost all of firms at the first year after their IPO in Indonesia Stock Exchange, has no significant relationship with the firm performance both current period and after dividend initiation period firm performance (Sugeng, 2005). This previous finding indicates that managers do not consider consequently both current and future period firm performance in making initial dividend decision as predicted in signaling theory. This previous study leads to conclusion that dividend initiation by Indonesian firms is not fully credible from the perspective of the signaling theory.

The reason behind this phenomena is that there was a tendency that managers of underperformed firms show a pragmatical behavior to imitate outperformed firms managers in post-IPO dividend initiation policy making in association with the timing and payout of the dividend. The purpose of such imitating effort from underperformed firms managers as argued by Viswanath et al. (2002) is to derive the same appreciation from market as expected to be obtained by companies with superior performance on their new shares just marketed after IPO. Sharma (2001) also claimed that mimicking in such policy making in dividend initiation by underperformed firms is considered as window dressing effort with the intention to attract investors after their IPO. These arguments are also supported by the fact found in the same previous research that companies in Indonesia were characterized with a unique behavior where almost all of them initiate their regular dividend at the first year after their IPO (Sugeng, 2005), although some of them in terms of financial performance are not yet ready to initiate their dividend (Note 2). This phenomena contradicts the initiation of dividend policy behavior among going public firms in developed countries like in the United States as reported by Jain et al. (2003). Thus, for part of companies in Indonesia, dividend initiation conducted at the first year after their IPO seems to be an imposed policy instead of a sound policy.

Such behavior of managers in making dividend initiation policy leads the initial dividend fails to serve as a reliable discriminator between the company with prospective performance and the company instead. This phenomena also means that dividend initiation policy as a corporate action loses its signaling value or is not a credible instrument for delivering a signal about the prospects of firm future performance. Therefore from the perspective of investors, the policy could not serve as a reliable indicator for predicting the firm future performance. These arguments are consistent with the claim by Sharma (2001) as mentioned previously, that the signal from the dividend policy adopted by the company is credible if companies with inferior prospects can not replicate (mimicking) the measures taken by the company that do have strong prospects. Most companies listed in IDX do not consistently consider firm performance prospects in formulating their dividend initiation policy as suggested by Lintner (1956). In turn, investors' awareness of the symptoms seems to make them not to respond as it should to dividend initiation policy taken by the company after IPO.

Another factor seems to cause dividend initiation policy taken by Indonesian firms not credible from perspective of signaling explanation is that some managers of underperformed companies are overoptimistic about their firm performance prospect. As a result, these managers assumed that the firm is financially strong enough to initiate their regular dividend with timing and payout that relatively resemble the decision taken by other companies with, in fact, strong performance. Evidence supporting this suggestion reported in Sugeng (2005) that the vast majority of the sample firms initiating their dividend one year post IPO was proved unable to maintain their first dividend payout in subsequent periods since their after dividend initiation performance was not supporting. Managers seemed to establish its first dividend with too high payout (overpaid).

The absence of short-term market response to dividend initiation policy in Indonesia seems to contradict findings resulted from studies conducted in the context of advanced markets such as that carried out by Asquith and Mullins (1983), Healy and Palepu (1988), Womack (1995), Taranto (2002), Kosedag and Michayluk (2000) and Jin (2000). Nevertheless, negative abnormal return found in this study is also consistent with that found by Asquith and Mullins (1983) and Jin (2000) that also reported negative abnormal return from dividend initiation policy taken by the majority of companies in their study.

The difference of this research findings conducted in Indonesia with those resulted from studies conducted in advanced markets could be associated with the difference of the capital market context. In developed countries

with advanced capital market, firms tend to initiate their regular dividend in the period in which the profitability and other performance indicators are in the best position and also when the prospects of the firm increased and sustainable (Sharma, 2001; Dhaliwal et al., 2003; Jain et al., 2003). In addition, the companies decide to initiate dividend when the market sentiment leading to a dividend premium (Bullan et al., 2003). Therefore, as reported by Jain et al. (2003), companies in developed countries tend not to initiate their dividend in the early years after their IPO. In case of Indonesian firms, the condition is just the opposite, approximately 95% (almost entirely) of firms, mainly those listed in Indonesia Stock Exchange, initiated their dividend just in the first year after the IPO (Sugeng, 2005).

The non existence of abnormal returns around dividend initiation announcement found in this study provides evidence about the absence of what is so called a credible signal of dividend initiation policy taken by going public firms in Indonesia. For investors, this finding provides an important empirical information that they don't need to just relying on the first dividend paid by firms as an early indication of the firm future performance prospects as well as future regular dividend flow.

From methodological perspective, since this research implements a new event study approach (PSM) with its all merits, there is some salient methodological issue needs to note. The cross sectional-based abnormal return instead of estimated abnormal return commonly used in traditional approach, should be carefully derived from fairly selected-matched firms. In practice, it is relatively hard to acquire equalent firms that machth treated firms. This problem becomes more serious when working with a small scale emerging capital market characterized with limited number of member (listed) firms that could lead to statistical problem (Note 3). Future research interested in further exploration of the approach should be aware of this concern.

6. Conclusions and Implications

By implementing propensity score matching, the new approach of event study, this research has proved that there is no significant short-term market response to dividend initiation policy. This means that there is no signaling phenomenon on one of the corporate actions particularly post-IPO dividend initiation undertaken by firms listed in Indonesia Stock Exchange. The findings are strongly thought to associate with the possible action from managers of underperformed companies to mimic dividend initiation policy taken by strong performance companies in terms of dividend timing as well as payout. Another possibility is that they are being overoptimistic about the prospects of the company's future performance.

The findings also imply that the signaling model of dividend explanation which is developed more based on the research findings on regular (periodical) dividend policy in developed capital markets context, is proven not to fully explain the phenomenon of one type of dividend policy behavior i.e. initiation dividend policy, in the emerging capital market environment such as in Indonesia. In turn, investors in Indonesian capital market, may not rely too much on the initial dividend as an indicator to predict the firm future performance. Inconsistency of this research findings with those resulted from researchs conducted in the context of advanced capital markets may be treated as the empirical explanation diversity on dividend policy behavior among different context. Frankfurter and Wood (2002) argued that there is no single model of dividend policy that applies to all contexts.

In terms of metodological approach, the application of propensity score matching as a novel approach in event study is very promising. Nevertheless, although it has underlying theoretical reasoning that outperforms the traditional ones, the use of propensity score matching approach needs a large number of firms from which control firms are selected. Accordingly the study conducted in market with limited number of listed firms such as in Indonesia could generates selection problem of control firms expected to best match treated firms.

Further research intended to test the accuracy of the approach relative to the previous (traditional) ones, as performed by Acharya (2012), should also be continually conducted. Since this research focussed only on short-term market response to dividend initiation policy, further research with the same approach needs to extend the event window and also to address longer-term market respon while exploring any other characteristic variables for better matching analysis.

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Notes

Note 1. From methodological concern, this study was inspired primarily by Cheng evaluation on existing findings inconsistency about consequences of dividend policy on stock prices. He noticed that the inconsistency of research findings is probably due to some fundamental limitaton of the traditional event study concerning mainly the issue of estimation model used to estimate abnormal return.

Note 2. The research found that there was no significant positive relationship between firm's performance both before and after dividend initiation and intitial dividend payout. This suggests that intitial dividend, notably paid by almost all of firms listed in Indonesia Stock Exchange just at the first year after their IPO, do not significantly

indicate past and future performance of firm.

Note 3. The optimal selection of firms to be the member of control group is characterized with treatment group and control group matching that generates mean difference of each characteristic variable between both groups approaching to zero. The larger the number of member firm in an organized market the more optimal the matching between treatment and control groups that could be achieved since control group firm that best matches treatment group firm could be greatly available. This potentially becomes a problem when dealing with an emerging market with limited number of listed firm that also means limited availability of member firms from which control group firms are selected.

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