ERASMUS UNIVERSITY ROTTERDAM

Erasmus School of Economics

Bachelor Thesis in Financial Economics

The practice of the Dividend-Capture Strategy in the Dutch stock market; an anomaly or risk premium?

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Date final version: 07/23/2020

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Abstract

This research will focus on the practice of the dynamic clientele effect, the Dividend-Capture strategy on the Dutch stock market. This paper will elaborate on past research done in the Dutch stock market regarding the Dividend-Capture strategy and highlight the influence between the relative and absolute magnitude of the dividends on the stock returns on ex-dividend day. By comparing the price-drop-to-dividend ratio of 1540 individual ex-dividend days from 76 different firms to the model formed by Miller and Modigliani (1962), a possible anomaly could arise. Findings in this research will highlight the significant difference between the price-drop of a stock, corrected by its expected return, and its amount of dividend distributed. This implies that when, disregarding transaction costs and taxes, dividend capturing is profitable in the Dutch stock market. However, investors cannot exploit this anomaly by managing their portfolio by looking at the absolute and relative magnitude of the dividends paid by the companies since the difference in their PDR's is not statistically significant.

1. Introduction

Dividends are distributions of a portion of a company's earnings over a specified period paid to the shareholders of the company. Shareholders that possess the share before the ex-dividend date have the right to receive dividend of the concerning company. This implies that if a shareholder sells the share immediately after the ex-dividend day, he will still receive dividend even though the shareholder does not own the share anymore on the dividend payment date. According to Fama (1982) and his theory about the Efficient Market Hypothesis, the amount of dividend paid per share is already incorporated in the share price on ex-dividend day. However, several types of research have found an interesting deviating relation between dividends and stock returns which are highlighted in this research.

According to Miller and Modigliani (1961), the type of dividend policy used by a firm is uncorrelated to its market value in a perfect world. Instead, the firm value is based on the choice of optimal investments. To meet the requirements of this 'perfect economy', a capital market must be subject to five strict assumptions which will be further elaborated in this research (Allen & Michaely, 1995). However, empirical evidence from Henry et al. (2017) shows that on average the prices of securities drop with a smaller amount than the amount of dividend obtained by the shareholders. However, if the dividend pay-out concerns just a small amount of dividend, transaction costs as well as the general trading risk will probably outweigh the gains realized by the dividend capture (Berk & Demarzo, 2016).

These two theories form the fundamental base of this research paper and formulate the following research question: "*The practice of the Dividend-Capture Strategy in the Dutch stock market; an anomaly or risk premium?*"

To answer this research question, an event study analysis will be executed where the influence of ex-dividend days on stock returns in the Dutch stock market will be highlighted. So far, several types of research examining the practice of the Dividend-Capture Strategy have been carried out in foreign stock markets. The conclusions of those studies are quite diverging. Therefore, research regarding this dynamic clientele effect with a focus on a not yet investigated stock market forms a great point of interest.

As mentioned before, several types of research conclude that the average price-drop of dividend-paying securities is significantly less than the dividend obtained by the shareholder

(Henry et al, 2007). This might imply that there exists a yet quite unknown anomaly in the stock market. To gain more knowledge about this possible anomaly itself, it might be interesting to investigate if the relative and/or absolute amount of dividend paid influences the price-drop-to-dividend ratio. When this is the case, investors can manage their portfolio in such a way that they will maximize their possible gains on ex-dividend day by taking the absolute and relative magnitude of the dividends that the stocks will pay into account.

Therefore, the following sub-question has been formulated: "*Does the relative and/or absolute magnitude of dividend paid have a significant influence on the results of practicing the Dividend-Capture Strategy?"*

The remainder of this paper is structured as follows; Section 2 will elaborate on existing literature regarding dividends and stock markets in general, event studies, and the practice of the Dividend-Capture strategy on foreign stock markets. Section 3 will highlight the data and methodology used in this research. Section 4 will present and explain all results that are obtained. Furthermore, it will discuss some limitations of this research as well as possible future research regarding the Dynamic Clientele Effect. Section 5 provides the conclusion of the research.

2. Literature Review

2.1 Event studies

One of the most frequently asked questions to economists is to research the impact an economic event has on stock prices and therefore on the value of firms. The best way to measure this influence is by exercising an event study. An event-study has been an effective research method in the financial and economic expertise to investigate the impact of an event on firm values. The first published research study that regards an event study, concerns a study that investigates the effect of stock splits on stock prices, executed by James Dolley in 1933 (MacKinley, 1997). According to Mackinley (1997), there are several other types of event studies such as studies regarding mergers & acquisitions, stock repurchases, and dividends pay-outs. In this research, an event study focussing on the distribution of dividends will be the point of interest.

2.2 Efficient Market Hypothesis

According to Fama (1970), the key role of a capital market is to efficiently allocate economic capital. This market can only be completely efficient when all available information is fully reflected in the prices of securities. This hypothesis that states that securities reflect all information available is also known as the Efficient Market Hypothesis (EMH). The reflection of the information in asset prices can be divided into three different forms, the weak form, the semi-strong form, and the strong form. The weak form EMH only reflects historical prices and returns. According to the semi-strong form, prices do not only reflect historical information but also all publicly available information. Finally, the strong form adds that also private information is reflected in the prices of securities. In general, markets are believed to behave according to the semi-strong EMH.

2.3 Anomalies

In financial markets, returns during certain periods or around different event dates can differ from the initially expected or forecasted returns determined by existing asset pricing models. Some examples of such yet unexplained occurrences are the January effect or the turn-of-the-week effect where returns significantly differ from existing equilibria. Those abnormal/deviating returns around some time frames or events are also called anomalies (Van der Sar, 2018). In general, there are two types of anomalies: the so-called market anomalies and the pricing anomalies. Market anomalies contradict the previously discussed EMH meanwhile pricing anomalies occur when a security is mispriced according to existing models. In this research both models will be a point of interest since the amount of dividend distributed is publicly available, it should be represented in the price according to the semi-strong form of the EMH. Moreover, as Miller and Modigliani discussed a model in their theory about dividend policies, the price-drop-to-dividend ratio should be equal to 1. Further in this research, the price-drop-to-dividend ratio will be elaborated.

2.4 Dividends in a perfect market

As mentioned before, according to Miller and Modigliani (1961), the type of dividend policy used by a firm is uncorrelated to its market value in a perfect market. For a market to be perfect, it should be subject to five strict assumptions. Those assumptions are as follows; i) *Absence of Taxes;* Instead of distributing dividends, a firm can choose to repurchase outstanding shares as a manner to distribute its earnings among its shareholders. Considering

a situation where dividends are taxed at a higher rate than capital gains, it is most favourable to repurchase shares instead of distributing dividends. What eventually would affect the firm's value. ii) *Presence of symmetric information;* This assumption implies that the market and managers of the firm have the same quality of information available. In practice, managers often have inside information that is not public. This can increase agency costs and eventually cause the choice of the type of dividend policy used, to reveal information to the market. This eventually causes the firm value to be affected by the type of dividend policy used. iii) *Presence of complete contracting possibilities*; As mentioned before, agency costs may cause managers to take decisions regarding dividend policies that could affect the firm value. A manager that owns a lot of stocks of the firm could determine the type of pay-out policy used that aligns the most with his own interests. The presence of complete contracts let the agency costs disappear. iv) *Absence of transaction costs;* The difference in transaction costs throughout the types of dividend policies, could create a preference for a certain type of policy. This is in contrary to the theory of Modigliani and Miller, stating that the type of pay-out policy does not affect firm value. v) *Presence of complete markets;* Due to differences in the marginal rate of substitution within groups in the population, a firm could expand its value by changing its pay-out policy to align the interests of one of the groups within its population.

In the case of a violation of at least one of the assumptions mentioned above, the market is imperfect. This can eventually determine an investor's preference, also known as clientele effects (Miller & Modigliani, 1961).

In the absence of arbitraging possibilities, the amount of dividend received after-tax should exactly equal the price drop on ex-dividend day after-tax (Miller and Modigliani, 1961). This can be written as follows:

1. $(Pcum - Pex)(1 - \boldsymbol{\tau} g) = Div(1 - \boldsymbol{\tau} d)$ $Formula\ 1: MM\ dividend\ policy\ approach$

$Pcum = Shareprice\ before\ going\ ex - dividend$

$Pex = Shareprice\ after\ ex - dividend$

$\tau g = Tax\ on\ capital\ gains$

$Div = Dividend\ amount$

$\tau d = Tax\ on\ dividends$

Given the controversy in theories about whether there is an arbitrage possibility in the use of the Dividend-Capture strategy (Miller & Modigliani (1961) vs Henry et al. (2017)), my first and main hypothesis is as follows;

Hypothesis 1; The price-drop-to-dividend ratio is equal to 1

In previous literature regarding the subject of the dynamic clientele effect, the effect of the relative and absolute magnitude of dividend pay-outs on the price-drop-to-dividend ratio in the Dutch stock market has never been tested. To add new information to the current literature available regarding the Dividend-Capture strategy, I have come up with the second hypothesis;

Hypothesis 2; There is a difference in the price-drop-to-dividend ratio between high dividend yield stocks and low dividend yield stocks.

With a possible anomaly in existence, linked to the dividends of stocks, it is relevant to have a closer look at the possibilities for making the optimal use of this anomaly. This way also flaws and opportunities arising from the practice of the Dividend-Capture strategy can come to light.

2.5 Existing literature about the practice of Dividend-Capture strategy

As mentioned before, Henry et al (2017) found clear evidence contradicting the theory of Modigliani and Miller (1961) regarding dividend policies in stock markets. Furthermore, they explicitly focussed on institutional traders. On average institutions would find positive dividend capture profits even after taking all trading costs into account. Furthermore, they find a positive relation between the trade execution skills of institutions and their profits gained after practicing the Dividend-Capture strategy.

According to Kalay (1982) previous research studying the ex-dividend day behaviour of stocks, contained two biases. The first bias is related to the fact that the positive relation between the ex-dividend price drop and the dividend yield of the concerning stock could result from a wrongly adjusted regular daily price movement of this stock. Secondly, according to this research, there is a presumption that some of the observations are not independent. This raises the question if this resulting correlation is interpretable. However, even when adjusting for these biases, the study found that the remeasured correlation between the ex-dividend price drop and the dividend yield is still positive. In this research, Kalay carried out the first

research regarding the dynamic clientele effect incorporating transaction costs. Accordingly, as Kalay (1982) and states, when the difference between price-drop and the dividend obtained outweighs the transaction costs, traders who are taxed equally on capital gains as on dividends should enter the market to realise profits. This also aligns with the theory of Rantapuska (2008).

Comparable research regarding the ex-dividend price behaviour has been carried out by Verboven, A (1996) in the Dutch stock market already. This paper highlights the effects on stocks as well as on option prices. The significant changes in markets and economies in the past 24 years emphasize the relevance of repeating this research, which will be complied with in this paper, by focussing only on the effects of the ex-dividend price behaviour on stocks in the Dutch stock-market.

Foreign country-specific research on this possible anomaly has also already been carried out in some other countries including Australia, Chile, Canada, Italy, and Greece. The results that were found in these researches are quite divergent. In Australia, a price-drop-to-dividend ratio significantly less than 1 was found, averaging 75-80% of the dividend paid, according to Brown & Walter (1986). The same result was found by Castillo & Jakob (2006) when researching the same phenomenon in the Chilean stock market. In Chile, the average price-drop-to-dividend ratio amounts to about 81.5%. Also results from a research in Canada and show that the ratio found when dividing the price drop by the dividend amount, is significantly different from 0 and 1 (Booth & Johnston, 1984). In Italy, an excess return of 1.67% is earned by using the Dividend-Capture strategy (Michaely & Murgia, 1995. These diverging results stress the relevance of researching potential arbitraging possibilities that occur when practicing the dynamic clientele effect of dividend capturing in the Dutch stock market.

3. Data and Methodology

3.1 Data

In this research, the stock returns and market returns are retrieved from WRDS, Compustat IQ. In this section, the sample as well as all descriptive variables used in this research are described.

3.1.1 Sample description

For this paper's sample, only Dutch stocks are used that are listed on Dutch stock markets. These markets are limited to the AEX, AMX, and ASCX. Some firms are also listed on foreign exchange markets. For those firms, only the Dutch counterpart is used in this research. After leaving out observations that contain missing data about stock returns and/or dividend payments, the sample consists out of 76 different stocks and 1540 individual dividend payments in total. The dividend payments are distributed between January 1, 2000, and December 31, 2019.

The financial database Compustat IQ has been used to extract all data regarding daily stock returns and all information involving the dividend distribution. For each event day, the exact ex-dividend date, amount of dividends paid, and stock price is used. In this research, only dividends on ordinary common stocks are considered. The frequency of the dividend payments within a firm does not influence in determining the sample. To minimize the noise in the sample, dividend payments that are less than or equal to €0.01 are excluded.

3.1.2 Firm-related variables

In this paper, the stock prices of all firms are retrieved from Compustat Capital IQ. Stock prices from t_{-45} until t_{+45} (with event date t_0) are used to eventually retrieve the firms' event-period specific Bèta's and expected returns (Henry et al., 2017). The market returns used in this research are represented by the returns of the ETF; iShares MSCI Netherlands ETF. This ETF tracks the returns of Dutch large-, mid-, and small-cap companies and therefore oversees the vast majority of the stocks used in the sample of this research (Blackrock, 2020).

The expected return at t_0 of the stocks will be estimated by using the market model. To estimate the expected day-specific returns, first, an event-period specific Bèta must be estimated. This Bèta is estimated by running a regression from market returns on the stock returns during the benchmark period. This benchmark period used to estimate the Bèta, will range from t_{-45} to t_{-6} and t_6 to t_{45} (Henry et Al., 2017). The event window will range from t_{-5} to t_5. The ex-dividend day will be the event-date and therefore be t_0.

This estimated Bèta will be inducted in the market model together with the market returns which will result in the E(Ri).

The market model used, can be found in the following formula;

2. $Ri = \alpha + \beta \mathrm{Rm} + \varepsilon$ *Formula 2; The market model*

$Ri = Return\ of\ the\ stock$
$\beta = estimate\ of\ systematic\ risk\ of\ stock$
$Rm = Return\ of\ the\ market$
$\varepsilon = Regression\ error\ with\ an\ expected\ value\ of\ zero$

The price-drop-to-dividend ratio will be used in this research to show the relative difference on average in the Dutch market between the received dividend and the exposed price drop after the ex-dividend date. This price-drop-to-dividend ratio, however, will be corrected by taking the expected returns of the securities into account. This way the effect of the Dividend-Capture Strategy solely will be highlighted and is corrected for possible market movements. To reduce the influence of outliers in the sample, all variables are winsorized at 2.5% and 97.5%. The distribution of the price drop to dividend ratio of the whole sample can be found in **Graph 1, Appendix.**

To formulate an answer to the sub-question, the dividend yield is a crucial variable. The dividend yield will be retrieved by dividing the amount of dividends distributed by the cum-price of the day before the ex-dividend day (t_{-1}) with ex-dividend day as t_0.

3. $\left(\frac{Amount\ of\ dividend\ paid}{Pcum\ (t-1)}\right)$ *Formula 3; Dividend Yield*

3.2 Methods

As mentioned before, according to Miller and Modigliani (1961) the price-drop-to-dividend ratio should equal 1 in a perfect market. The price-drop-to-dividend ratio can be derived from the following formula:

4. $\left(\frac{(Pcum,i - Pex,i)}{(1+E(Ri))}\right) / Div_i$ *Formula 4; Price-drop-to-dividend ratio*

$Pcum = Shareprice\ before\ going\ ex-dividend$
$Pex = Shareprice\ after\ ex-dividend$
$E(Ri) = Excected\ Return\ of\ the\ stock$
$Divi = Dividend\ amount$

To test the hypothesis formed by this theory;

H_0: Price-drop-to-dividend ratio = 1
H_a: Price-drop-to-dividend ratio < 1

A one-sided T-test will be used at a 5% significance level.

To formulate an answer to the sub-question, it might first be interesting to find a possible relationship between the absolute as well as relative amount of dividends paid and the price-drop-to-dividend ratio. To test this, the sample will be split into 4 groups with the same sample size based on their absolute dividend magnitudes. Group 1 (quarter of the total sample with the largest magnitude) and group 4 (quarter of the total sample with the smallest magnitude) will then be compared to find evidence that could prove existence of a significant difference in price-drop-to-dividend ratio *(PDR)* between these groups. After that, a possible relation between the dividend yield of a stock and its price-drop-to-dividend ratio will be tested. Just like in the previous test, the sample will be split into 4 equally sized groups. The PDR of the group containing the stocks with the highest dividend yields (PDRY 1) will then be compared to the group containing the stocks that have the lowest dividend yield stocks (PDRY 4). To test this second hypothesis;

H_0: *PDRY 1 = PDRY 4*
H_a: *PDRY 1 ≠ PDRY 4*

A two-sided T-test will be used at a 5% significance level.

4. Empirical Results

4.1 Descriptive statistics.

Extracting all data from Compustat, Capital IQ securities database for the period January 1, 2000 – December 31, 2019, provides 1540 separate dividend distributions over a total of 76 different stocks after extracting dividend payments over preferred stocks and dividend payments totalling less than €0.01. All variables have been winsorized at 2.5% and 97.5% to minimize noise caused by outliers in the sample. **Table 1** provides a summary of the relevant statistics related to the price-drop-to-dividend ratio (PDR) of the sample and all variables used to calculate the PDR.

Table 1: Descriptive statistics variables

Variable Name	N	Mean	Median	Standard Dev.	Min	Max
Dividend Yield (in decimals)	1540	0.0257	0.0207	0.0178	0.0055	0.0818
Dividend	1540	0.7478	0.4400	0.8155	0.0800	4.0000
Bètas	1540	0.4319	0.3944	0.3694	-0.3253	1.4217
Cumprice	1540	29.39	24.39	19.93	3.45	91.65
Exprice	1540	28.76	23.73	19.46	3.26	88.19
Marketreturn (in decimals)	1540	0.0004	0.0007	0.0114	-0.0273	0.0268
Expectedreturn (in decimals)	1540	0.0003	0.0001	0.0060	-0.0156	0.0165
Pricedrop to dividend ratio	1540	0.7835	0.7893	1.0448	-2.0001	3.4640

Table 1 illustrates that the average price-drop-to-dividend ratio of the sample is 0.7835. This number is smaller than the outcome that according to Modigliani and Miller's (1961) theory would have been the outcome of this research, namely 1. The price-drop-to-dividend ratio obtained in this research by practicing the dividend capture strategy on the Dutch stock market is very similar to the ones that were found in comparable researches in the Australian and Chilian stock market. In Australia, as mentioned before, the average price-drop-to-dividend ratio was between 75-80% of the amount of dividend obtained Brown & Walter (1986). In the research regarding the Chilean stock market, a price-drop-to-dividend ratio of 81.5% was found Castillo & Jakob (2006).

For the second hypothesis, the existence of a difference in price-drop-to-dividend ratio between high and low dividend payouts is tested. **Table 2** provides a summary of the relevant statistics related to the price-drop-to-dividend ratio (PDR) of the quarters of the sample containing the lowest and highest amount of dividends paid.

Table 2: Descriptive statistics Price-drop-to-dividend ratio for highest and lowest quarters of the absolute amount of dividends paid and the dividend yields

Variable Name	N	Mean	Median	Standard Dev.	Min	Max
PDR low absolute dividend	385	0.7533	0.6897	1.8590	-5.2585	5.2175
PDR high absolute dividend	385	0.7956	0.8260	0.5274	-0.5855	2.1623
PDR low dividend yield	385	0.7583	0.6990	2.0453	-5.1211	5.3981
PDR high dividend yield	385	0.7597	0.8112	0.4386	-0.2004	1.7494

As can be derived from **table 2**, the average PDR of small absolute dividend payments is lower than the average PDR regarding large absolute dividend payments. This implies that in this sample, on average, the practice of the Dividend-Capture strategy on only small-dividend paying firms in the Dutch stock market would have been more profitable compared to when

using this strategy on larger absolute dividend payments in the past 20 years. However, as visible in **Table 2**, there exists only a very small difference in PDR between the quarters containing high dividend yield and low dividend yield stocks.

4.2 Test statistics

To test the first hypothesis focussing on whether the price-drop-to-dividend ratio significantly differs from the initially mentioned '1' by Modigliani and Miller (1961), a one-sided T-test has been used at a 5% significance level. As can be derived from **table 3**, the price-drop-to-dividend ratio significantly differs from 1, with a p-value of p = 0.0000. Therefore, the null hypothesis from the first hypothesis test can be rejected. This implies that the price-drop-to-dividend ratio in this research significantly differs from 1 at a 5% significance level. This highly significant result corresponds to the results found in the research of Henry et al (2007).

Table 3: Test statistic first Hypothesis

One sample t-test					
Variable	**Observations**	**Mean**	**Standard Error**	**Standard deviation**	**95% Conf. Interval**
Price-drop-to-dividend ratio	1540	0.784	0.266233	1.044774	[0.7312843 ; 0.8357279]
Mean = mean Price-drop-to-dividend ratio					**T value = -8.1317**
Ho: mean = 1					δf = 1539
Ha: mean < 1					
Pr(T < t) = 0.0000					

To formulate an answer to the sub-question; "*Does the relative and/or absolute magnitude of the dividend yield have a significant influence on results of practicing the Dividend-Capture Strategy*?", the difference between the PDR of the relatively-and absolutely highest/lowest dividend-paying stocks of the sample is investigated. A two-sided T-test is executed to test whether the difference between the PDR's is equal to 0.

First, we compare the difference in PDR between the largest and smallest quarter with the absolute dividend as the variable of interest. As visible in **table 4,** PDR 1 and PDR 4 do not differ significantly since the p-value = 0.6728. Which is larger than the critical value of p = 0.025. Therefore, we cannot conclude that there is a significant difference in PDR between high and low dividend paying stocks. This result might be caused by the influence of some large outliers (even after winsorizing) in the samples of PDR 1 and PDR 4. Both histograms can be found in **Graph 2** and **Graph 3**, **Appendix**.

Table 4: Test statistics for the second hypothesis

One sample t-test					
Variable	Observations	Mean	Standard error	Standard deviation	95% Conf. Interval
PDR smallest dividends (PDR 4)	385	0.75325	0.0947433	1.858998	[0.5669733 ; 0.9395345]
PDR largest dividends (PDR 1)	385	0.79558	0.0268811	0.5274447	[0.742729 ; 0.8484341]
difference	*385*	*-0.0423*	*0.1001402*	*1.964893*	*[-0.2392195 ; 0.1545641]*
Mean(diff) = mean (PDR smallest dividends - PDR largest dividends)					**T-value = -0.4227**
Ho: mean(diff) = 0					δf = 384
Ha: Mean(diff) ≠ 0					
Pr(T > t) = 0.6728					

Secondly, we have a look at the difference in PDR with the relative dividends paid (dividend yield) as the variable of interest. As visible in **Table 5**, PDRY 1 and PDRY 4 do not differ significantly since the p-value = 0.9886. This is substantially larger that the critical p-value 0.025. Therefore, the null hypothesis will not be rejected. This concludes that we cannot say that the PDR from high dividend yield stocks significantly differs from the PDR of low dividend yield stocks. Also, this result may be caused by the influence of some large outliers (even after winsorizing) in the samples of PDRY 1 and PDRY 4. The histograms of these variables can be found in **Graph 4 and Graph 5, Appendix.**

Table 5: Test statistics for the second hypothesis

Variable	Observatio	Mean	Standard err	Standard deviatic	95% Conf. Interval
PDR Highest dividend yield (PDRY 4)	385	0.75567	0.0238751	0.468464	[0.7087285 ; 0.8026133]
PDR smallest dividend yield (PDRY 1)	385	0.75371	0.1378277	2.704375	[0.4827223 ; 0.1.024705]
difference	*385*	0.00196	0.1366072	2.680428	*[-0.2666347 ; 0.0.270549]*
Mean(diff) = mean (PDR smallest dividend yield - PDR highest dividend yield)					**T-value = 0.0143**
Ho: mean(diff) = 0					δf = 384
Ha: Mean(diff) ≠ 0					
Pr(T > t) = 0.9886					

4.3 Limitations and future research

This research is subject to several limitations. First and most important limitation, is that transaction costs and taxes are not considered. Despite the results being very comparable to the results found in previous researches in foreign countries, implementing taxes and transaction costs would improve the accuracy of the model and the credibility of the results. Furthermore, in this research an overarching ETF has been used as the 'market', to compare its return to the returns of the individual stocks. In future research, an individual market return for each stock could be used to give a more precise interpretation of the differences in returns. For example, the returns of the AMX in general could be used as the market returns when comparing to a stock that is listed on the AMX and the returns of the AEX could be used as the market return when comparing the returns to a stock that is listed on the AEX. Another

limitation of this research is that it is bounded just to the Dutch stock market and therefore not representative for foreign stock markets. Future research could include all dividend-paying stocks in the world. This way a general conclusion could be drawn about the results of the practice of Dividend-Capturing on stocks.

Furthermore, future results regarding the same research could be improved by optimizing all methods for retrieving the data. By first looking at what is the best way to estimate the bèta, and what is the best time frame for the benchmark and event period. When the best estimating methods for those variables are known, the results obtained would be more credible and applicable.

Further research could also focus on the differences in abnormal returns using the Dividend-Capture strategy on the Dutch stock market between institutional investors and individual investors. This will give clarity about the fact whether it is possible for every investor to gain from the use of the dynamic clientele effect, bearing in mind the transaction costs and taxes.

5. Conclusion

In this research, the practice of the infamous dynamic clientele effect on the Dutch stock market is highlighted. With the use of data regarding 1540 individual ex-dividend dates from 76 different firms retrieved from Compustat IQ, I was able to investigate the effect of dividend distributions on the stock returns. By investigating this relation between dividends and stock returns, I could analyse the profitability and the possible anomaly of practicing the Dividend-Capture strategy on the Dutch stock market.

On average the price-drop corrected by the expected return is significantly less than the dividend obtained by the shareholder. When using the formula from Henry et al (2017) an average price-drop-to-dividend ratio of 0.7835 was found. This implies that on average the price drop of a security on the Dutch stock markets is only about 78% of the dividend gained by the shareholder. This means that practicing the Dividend-Capture strategy on average is profitable.

To gain more detailed knowledge of this existing anomaly, a more thorough investigation regarding the relationship between the relation to the price-drop-to-dividend ratio (PDR) of

stocks and their dividends paid and dividend yields is carried out. By highlighting the influence of the amount of dividend paid and the magnitude of the dividend yield on the price-drop-to-dividend ratio, investors can manage their portfolio in such a way that they will maximize their possible gains on ex-dividend day. They can do this by taking the magnitude of the dividends that the stocks will pay into account. After splitting all dividends into four groups sorted by, first, the magnitude of the dividends paid and second, the amount of the dividend yield, the largest and smallest quarters of the sample have been compared. The quarter containing event dates that pay the lowest amount of dividends has an average PDR of 0.7533 meanwhile the quarter containing the highest paying dividends has an average PDR of 0.7956. The difference is almost 6%, however, not significant when tested using a t-test at a 5% significance level due to some large outliers in the PDR of the low dividend-paying stocks. Furthermore, the quarter of dividend payments in the sample containing the highest dividend yields had an average PDR of 0.7557 and the quarter with the lowest dividend yield has an average PDR of 0.7531. However, the difference is not significant at a 5% significance level. Therefore, no significant conclusion can be drawn, and the second hypothesis cannot be rejected.

Future research can elaborate on this research by taking transaction costs and taxes into account. This way more credible results can be obtained which would further elaborate all details of this anomaly. Furthermore, an individual market return could be offset to each stock. This way each stock is corrected by the market it is affected by instead of an overarching general market.

Altogether, evidence to answer the research question is presented throughout this research. Without taking transaction costs and taxes into account, statistically significant abnormal returns can be realized when practicing the Dividend-Capture strategy on the Dutch stock market and can, therefore, be considered a yet unexplained anomaly. However, investors cannot exploit this anomaly by managing their portfolio by looking at the magnitude of the dividends paid by stocks since the difference in their PDR's is not statistically significant.

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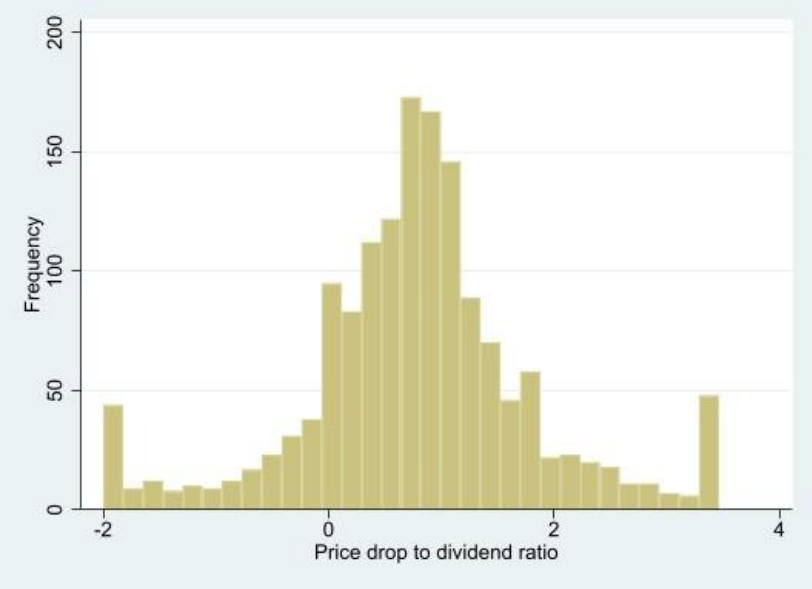
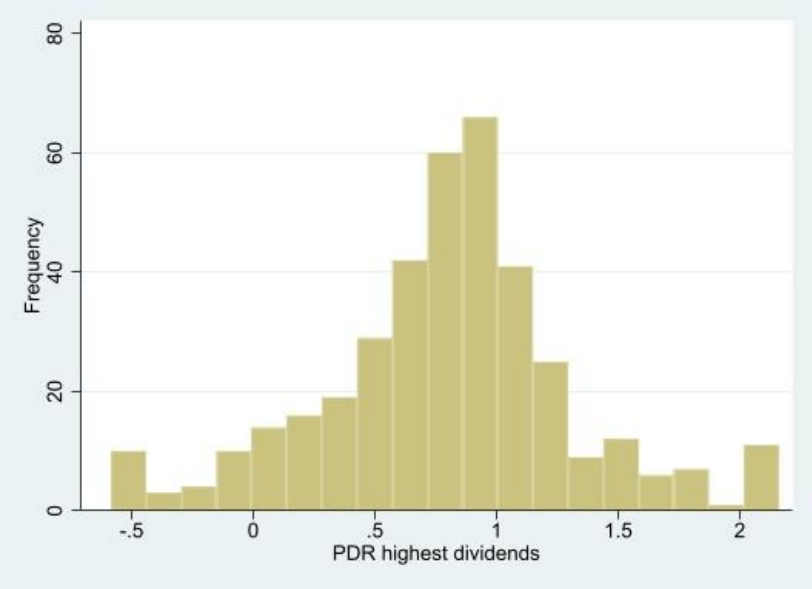
Appendix

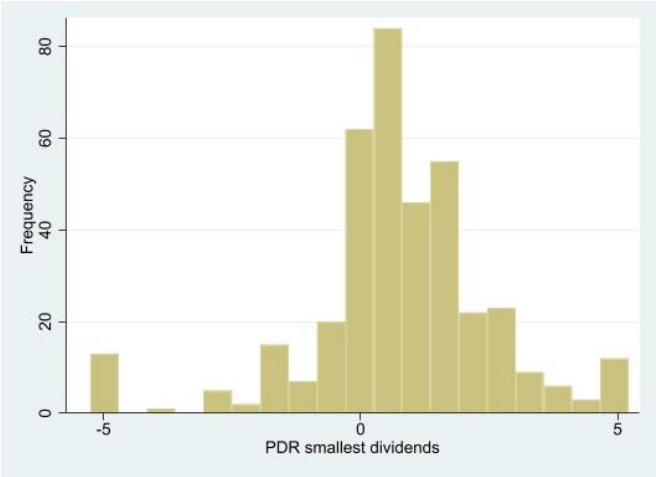
Graph 1: Distribution of the Price-drop-to-dividend ratio of the whole sample



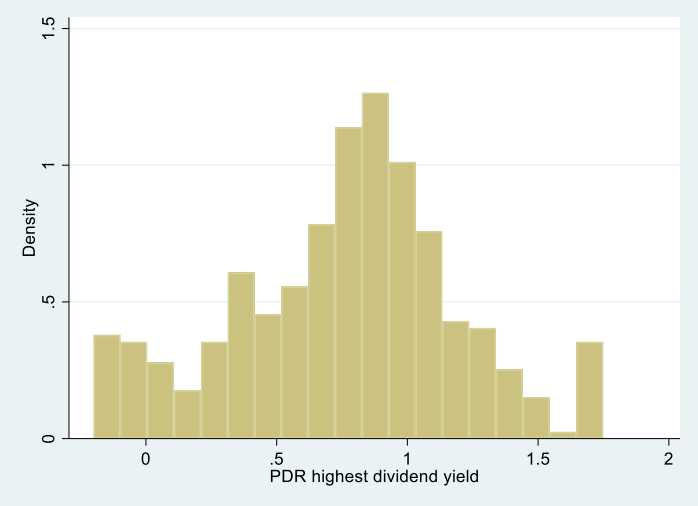
Graph 2: Distribution of the Price-drop-to-dividend ratio of the highest dividends quarter



Graph 3: Distribution of the Price-drop-to-dividend ratio of the lowest dividend pay-out quarter



Graph 4: Distribution of the Price-drop-to-dividend ratio of the highest dividend yield quarter



Graph 5: Distribution of the Price-drop-to-dividend ratio of the lowest dividend yield quarter