LUNDS UNIVERSITET

“Dividend announcements and the price of stocks”

An event study measuring the abnormal returns of a special cash dividend announcement.

Author: Markus Tyrstrup

Supervisor: Claudio Daminato

Department of Economics

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1. Introduction

Will a special cash dividend announcement from a company on NASDAQ GS create abnormal returns?

In this thesis I will perform an event study on special cash dividend announcements and if they produce abnormal returns. The thesis will look at the announcements from companies listed on the NASDAQ GS during a five-year period between 2018-01-01 and 2023-01-01.

There is a lot of research regarding dividend payments and their effect on the price of the regarding stock. Because of this it would not be productive or very interesting to write my thesis about this, that is when I thought about the announcement of a dividend. There were two different possible approaches that I could take, the first would be to look at an announcement about the change in the dividend payment and the second would be to look at the announcement of a special dividend. I chose the latter because I thought that it would be more interesting and a bigger element of surprise rather than a change in a currently existing dividend.

Analyzing the abnormal returns around a special cash dividend can create a better understanding of the stock market and its efficiency. Understanding how efficient our markets are could be important in other areas where market efficiency plays a role. Finding statistically significant patterns and/or other market signals around a special cash dividend announcement could create a normalized trading strategy.

After establishing my subject, I decided to look for information about dividend announcements both in the form of raw data and in the form of existing research. There are many interesting thoughts and ideas surrounding dividends and the best way to see if these thoughts or ideas are relevant is to put them to the test. So that is what I decided to do.

I will now explain exactly what a special cash dividend is. A special cash dividend is a non-recurring cash dividend that is distributed to the company's shareholders. This dividend is often also called an "extra" dividend because it is not a recurring nor an expected dividend. Because of this surprise-element in a special cash dividend one would think that an announcement of one would create a large market reaction. Therefore, my analysis will look at just that reaction surrounding the time of a dividend.

This thesis as based on the market model, which is further explained in the method-part of this thesis. The data was first collected from Bloomberg Terminal about the "Special Cash Dividend Announcement Latest Date" on a five-year period from 2018-01-01 to 2023-01-01. This data was then used to find the prices of the individual securities for the set time-period. With this data it is then possible to calculate the abnormal returns. With a neutralized event time it is possible to calculate the average size of the abnormal returns for a certain event-day. This is called the Average Abnormal Returns (AAR) and if we cumulatively sum the AAR together for different time-intervals we get the Cumulative Average Abnormal Returns (CAAR). The AAR-values and CAAR-values are then tested for statistical significance.

The results gathered from my data showed that there were a few positive statistically significant results. The AAR-value on day 0 and day 1, and the CAAR value observed on day 1 were all positively statistically significant. This indicates that the announcements observed did create abnormal returns on the market.

One could then argue that one of the main functions of this thesis, when broken down, is to test the market for its efficiency. In short it would be to see how efficient the market is at reacting and incorporating this new information, the announcement of the special cash dividend, into the stock price. This is directly connected to the Efficient Market Hypothesis that I will explain in the theory part of this thesis.

2. Past Research

I found one article about this topic called “The impact of special dividend announcement on the stock return: The case of Malaysia” (2011). It was written by Pegah Dehghani and Loo Sin Chun from Universiti Kebangsaan Malaysia and Open University Malaysia. They performed an event study on the special dividend announcements from ninety-three companies, listed on the KLSE (the KLSE also known as Bursa Malaysia is the Malaysian stock exchange).

The event study was performed by applying the market model by MacKinlay (1997), this model is explained in depth in the method part of this thesis since that is the model that I base my thesis on. They based their analysis on the abnormal returns and in the conclusion, they write that the findings they made indicated that a special dividend announcement signaled good news for investors and the overall market. This would then in turn cause the returns the react positively and immediately after the announcement. They also found that the on the second day after the special dividend announcement, the abnormal returns were negative. They argued that this was because of traders selling of their stocks after the positive abnormal returns from the day before. Another interesting result they found was that the market expected an announcement before the announcement was made probably because of leakages.

In their thesis they also write about the Malaysian market being unique because *“…different countries have different business policies, which are also affected by different factors such as the culture, stage of capital market efficiency and the investors’ behavior of that country…”*. This indicates that it is relevant to test this on different markets in different countries as one could expect different results. The factors mentioned in the quote could have a big impact on the results or maybe they don’t.

In the study above, by Pegah Dehghani and Loo Sin Chun (2011), the writers think that the observed result from their market is unique. Because of this it becomes very interesting to perform a similar study and compare the results. If the findings are similar, then it could mean that the markets aren’t so different as one might suspect. This makes a study done on a different country and market very interesting since that creates a comparable study which can tell if the countries are as different as suspected in that regard. The data in my thesis is

collected from the NASDAQ Global Select which would create interesting results to be compared to the results from the Malaysian market.

In *"Shareholder wealth, information signaling and the Specially Designated Dividend"* (1983) by James A. Brickley an empirical study was performed. It compared Specially Designated Dividends with regular dividend increases and their effect on common stock returns, dividend and earning patterns. The study consists of 165 Specially Designated Dividends from the New York or American Stock Exchange declared between 1969 and 1979. In the text a Specially Designated Dividend is determined as "extra", "special" or "year-end".

In the text they observed that during the announcement period of the Specially Designated Dividends there was evidence of abnormal positive returns.

The text focused a lot on the comparison between a Specially Designated Dividend and a regular dividend. In the conclusion it says that the announcement of both Specially Designated Dividends and regular dividends are both bearer of positive information although the regular dividends provided a more positive message.

In the study above, by James A. Brickley (1983), the result is based on Specially Designated Dividends from 1969 to 1979. This is more than 40 year old data, the results from this study could have drastically changed with the increased availability of information through technical advancements. This means that a study from this century could have drastically different results. The data in my thesis is collected between 2018-01-01 and 2023-01-01, this makes it interesting to compare the results from the two different studies.

3. Theory

The Efficient Market Theory:

In a review paper from Eugene F. Fama (1970) one can read about the efficient market theory. This theory divides the efficiency of the market into three different categories with different levels of "strength" called strong, semi-strong and weak. In the book "Finance" by Hans Byström (2014) one can read that the different strength-levels are directly connected to the amount and quality of information available. Hans Byström talks about three different levels of information, historical, public and insider. Historical information is only the historical price movements, the public information is for example quarterly reports, credit-ratings, public news etc and lastly insider information is information that is secret to the public and only known by perhaps the CEO of the related company.

Strong efficiency: In the strong form the price of the stock reflects all information-levels, historical, public and insider.

Semi-strong efficiency: In the semi-strong form the price of the stock reflects all information-levels except the insider information, in other words only the historical and public information-levels.

Weak efficiency: In the weak form the only available information-level is the historical-level.

One can expect our markets to be between semi-strong and weak. A strong efficiency would be unrealistic for our real markets.

4. Method and Sampling

4.1 Method summary

The method used in this thesis is an event study. In “Event studies in Economics and Finance” (1997) by A. Craig MacKinlay one can read about the market model. The market model is the model that I will be using in this thesis. The market model is a model that compares the return of any security to the return of the market portfolio. In doing this one can find if the given security shows any signs of abnormal returns. In this thesis I will compare the daily return of a stock with the return of the market. But first we will define the event time and windows.

4.2 Event time

In the market model it also important to note that the time that the events occur are neutralized, which means that the announcement date of every observation will have the same value, 0. This makes the date of the event 0 or also called τ and the days before that would be -1, -2… and the days after the event will be 1, 2… and so on.

The event can be split up in three different segments called the estimation window, the event time and the post-event window. These are displayed below.

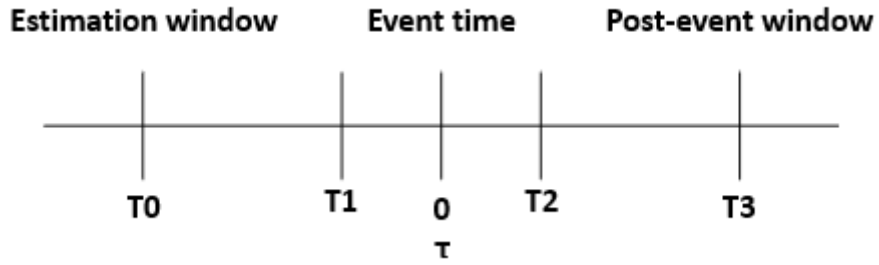

Figure 1: A timeline for the event

- Estimation window:

The estimation window is the time before the event occurs, between T0 and T1. The estimation window is used to estimate the parameters that will determine the expected return during the event window and the post-event window. It is therefore important that the estimation window ends a bit earlier then the event time. Otherwise, the estimated parameters

from the estimation window could be affected by things surrounding the event time giving us parameters that is already influenced by the event. In this thesis the estimation window is nine days long and is between day -10 and day -2. The estimation window end two days before the event.

- Event time:

The event time is the time when the event occurs, between T1 and T2. In this thesis the size of the event time is three days, the day before the event the day of the event and the day after the event. Since the announcement is on day 0 there is a chance that the announcement was announced so late that the markets were closed, causing the effect of the announcement to be delayed to the day after. This means that the event time is between day -1 and day 1.

- Post-event window:

The post-event window is the time after the event has occurred, between T2 and T3. The post-event window will show eventual drifts of the announcement. The announcement could have effects that were quickly up and down or maybe the effect linger for a longer time-period. The event window in this thesis is, as the estimation window, 9 days long. The days of the post event window is between day 2 and day 10.

4.3 Calculating the normal and abnormal returns

I will now show how the normal and abnormal returns are calculated. The following formula is used to calculate the return of security i for time t. The return of a stock can be seen as the percentage change in the price of a stock from yesterday to today. If the return is positive, it means that the price of the stock has increased and similarly if the return is negative, it means that the price of the stock has decreased.

$$\boldsymbol{R_{it} = \frac{P_{it} - P_{it-1}}{P_{it-1}}}$$

Where:

Rit: is the daily return of a stock i at time t.

Pit: is the closure-price at time t for stock i.

Pit - 1: is the closure-price at time t-1 for stock i.

Calculating the daily market return, **Rmt**, is done in the exact same way but now the closure price at time t and the closure price at time t-1 is the price of the market index and not the price of an individual stock. The stocks used should be connected to the market index since the market index is later used to calculate the expected return of the stocks.

The values that we calculated above, the daily stock and market returns, can then be used to formulate the market model. The formula used in the market model is the Ordinary Least Squares (OLS) and is used to find the expected return of the stock. This formula is shown below:

$$\boldsymbol{R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it}}$$

$$\boldsymbol{E(\varepsilon_{it}) = 0 \qquad var(\varepsilon_{it}) = \sigma_{\varepsilon}^2}$$

In the market model, αi, βi and σ^2 are the parameters.

The Ordinary Least Squares (OLS) are under general conditions a consistent estimation of the market models parameters. An assumption that the asset returns are multivariate normal and independently and identically distributed through time is empiricable reasonable. This assumption is sufficient for the market model parameters to be efficient as well.

The estimation for the parameters is done on the estimation window. By estimating the parameters on the estimation window one removes the potential effect that the announcement will have on the estimation of the return. If the regression is made on the entire event time, then the effect of the announcement will already be incorporated in the expected return. This would mean that if there is an abnormal effect on the return it would not show. Therefore the following formulas for calculating the parameters are used:

$$\widehat{\boldsymbol{\beta}}_{\boldsymbol{i}} = \frac{\sum_{\tau=T_0+1}^{T_1}(R_{i\tau} - \widehat{\mu}_i)(R_{m\tau} - \widehat{\mu}_m)}{\sum_{\tau=T_0+1}^{T_1}(R_{m\tau} - \widehat{\mu}_m)^2}$$

$$\widehat{\boldsymbol{\alpha}}_{\boldsymbol{i}} = \widehat{\mu}_i - \widehat{\beta}_i \widehat{\mu}_m$$

$$\widehat{\sigma}_{\varepsilon_i}^2 = \frac{1}{L_1 - 2} \sum_{\tau=T_0+1}^{T_1} \left(R_{i\tau} - \widehat{\alpha}_i - \widehat{\beta}_i R_{m\tau}\right)^2$$

With the following calculations for the two μ's:

$$\widehat{\boldsymbol{\mu}}_{\boldsymbol{i}} = \frac{\mathbf{1}}{\boldsymbol{L_1}} \sum_{\tau=T_0+1}^{T_1} \boldsymbol{R_{i\tau}}$$

$$\widehat{\boldsymbol{\mu}}_{\boldsymbol{m}} = \frac{\mathbf{1}}{\boldsymbol{L_1}} \sum_{\tau=T_0+1}^{T_1} \boldsymbol{R_{m\tau}}$$

After calculating the parameters of the model one can use them to find the abnormal returns. The formula for calculating the abnormal returns is shown below:

$$\boldsymbol{AR_{i\tau} = R_{i\tau} - \widehat{\alpha_i} - \widehat{\beta_i} R_{m\tau}}$$

$$\boldsymbol{AR_{i\tau} = R_{i\tau} - E(R_{i\tau})}$$

As can be seen in the formula above the abnormal returns is the difference between the observed value of the daily return of a stock minus the expected return of that stock.

4.4 Statistical properties of the abnormal returns

The abnormal returns will have the following statistical properties, they will be jointly normally distributed with a conditional mean and variance of zero and σ^2(ARiτ) respectively.

$$\boldsymbol{AR_{i\tau} \sim N\left(0, \sigma^2(AR_{i\tau})\right)}$$

$$\boldsymbol{\sigma^2(AR_{i\tau}) = \sigma^2_{\varepsilon_i} + \frac{1}{L_1}\left[1 + \frac{(R_{m\tau} - \widehat{\mu}_m)^2}{\widehat{\sigma}^2_m}\right]}$$

As displayed in the equation above, the conditional variance is determined by two components. Since L1 is the estimation window, a longer estimation window will make the second term approach zero. By having the second term approach zero one can expect the abnormal return observations to be independent through time.

4.5 Calculating AAR and CAAR

After calculating the abnormal returns, we will have to average them. The average is done by averaging the result for every company in the 21 different time-periods. Giving us one average of the abnormal return for every time-period. This is done since we have more than one observation. The following formula is then used:

$$\boldsymbol{AAR_{\tau}} = \frac{\mathbf{1}}{\boldsymbol{N}} \sum_{\boldsymbol{i=1}}^{\boldsymbol{N}} \boldsymbol{AR_{i\tau}}$$

With a large estimation window, the average abnormal returns will have the following variance:

$$\boldsymbol{var(AAR_{\tau})} = \frac{\mathbf{1}}{\boldsymbol{N^2}} \sum_{\boldsymbol{i=1}}^{\boldsymbol{N}} \boldsymbol{\sigma_{\varepsilon}^2}$$

The average abnormal returns can now also be cumulatively summed together creating a value that will show the change in the abnormal returns from one time-period, t1, to another time-period, t2. Calculating this is done by the following formula:

$$\boldsymbol{CAAR_{(\tau_1,\tau_2)}} = \sum_{\boldsymbol{\tau=\tau_1}}^{\boldsymbol{\tau_2}} \boldsymbol{AAR_{\tau}}$$

$$\boldsymbol{var\left(CAAR_{(\tau_1,\tau_2)}\right)} = \sum_{\boldsymbol{\tau=\tau_1}}^{\boldsymbol{\tau_2}} \boldsymbol{var(AAR_{\tau})}$$

4.6 Testing AAR and CAAR

After calculating both the AAR and the CAAR it is now highly relevant to do inference on them. Without doing a proper test one can't tell if the results that we have observed are statistically significant or not.

The average abnormal returns for every event period observed can then be analyzed. One can then test the hypothesis that the value is statistically significant different from 0. This is done by conducting a t-test. The formula from the market model for a t-test is as follows:

$$t = \frac{AAR_\tau}{\sqrt{var(AAR_\tau)}}$$

The t-value can then be compared to the different levels of significance. In the t-test above we can either test if the average abnormal returns are different from zero or just larger then zero. This will depend on the type of test if it's one- or two-tailed. When comparing to zero, a two-tailed test tests both if the observed value is significantly larger or smaller then zero. A one-tailed test tests only in one direction either larger or smaller. By using a five-percent level of significance a two-tailed test will have two and a half percent in each end of the "bell curve" while in a one-tailed there is five percent in one end. In this thesis I will use a two-tailed test because I'm testing if the average abnormal value is significantly different from zero. By using a five-percent level of significance and a two-tailed test, the critical value for the t-values in this thesis will be ±1.96. This means that if a t-value is higher, or lower, then 1.96 then the result is statistically significant.

It is also relevant to test if the CAAR has any significant differences from zero. This is done by the following formula:

$$t = \frac{CAAR_{(\tau_1,\tau_2)}}{\sqrt{var\left(CAAR_{(\tau_1,\tau_2)}\right)}}$$

4.7 Sampling

The data that made this thesis possible is the "Special Cash Dividends Latest Announcement Date". This was collected from the Bloomberg Terminal.

The first criteria on the data on the Bloomberg Terminal was "Trading Status". In that field I chose the criteria "Active" which means that the only securities that was shown is currently active.

After that I chose to filter on "Exchanges". There where many possible exchanges to choose from but I choose the "NASDAQ GS" which stands for "*National Association of Securities Dealers Automated Quotations Global Select"*. The Global Select market is one of three market tiers of the Nasdaq Stock Market. The three different tiers are the Capital Market (CM – small cap), the Global Market (GM – mid cap) and finally the Global Select Market (GS – large cap). The market that I chose, the Global Select Market, consists of over 1000 stocks

that all must meet a set of requirements about liquidity, financial and corporate governance standards from Nasdaq themselves.

The third criteria I choose was the “Special Cash Dividends Latest Announcement Date”. This was the data that I was after and also the last criteria that I needed for my data. This data was collected from a five-year period, from 2018-01-01 to 2023-01-01. After applying this last criteria, I was left with 96 securities. This in turn became the 96 firms that I would include in my analysis.

From the data collected, the dates of the latest special cash dividend announcement, I would now have to find the closing price of every stock from the announcement minus eleven days all the way to the announcement date plus 10 days. I made sure that the function gave me only days when the market was open meaning that every closing price generated is from a trading day and not a weekend for example. I generated this data from the excel-function “STOCKHISTORY”.

I have now only one thing left to generate and that is a market portfolio. For this market portfolio I chose the NASDAQ Global Select Market Composite (NQGS). This choice was obvious because the stocks that I was going to do my analysis on was chosen from the NASDAQ Global Select and the market above is the composite index of the stocks in the NASDAQ Global Select. The closing price for the NASDAQ Global Select Market Composite was generated like the closing price for the individual stocks with the “STOCKHISTORY” function in excel.

5. Results

I will now in this section show the results that I could calculate from the data gathered.

5.1 Descriptive data

The table on the following page has five columns and twenty-one rows. The columns are, from left to right, “DAY”, “AAR”, “T-VALUE (AAR)”, “CAAR” and “T-VALUE (CAAR)”. Every row is a different day meaning that every other value observed is spread out over which day it was observed regarding the event date. The second column “AAR” shows the AAR-value. The third column “T-VALUE (AAR)” shows the t-value for the observed AAR. The fourth column “CAAR” shows the CAAR-value and lastly the fifth column “T-VALUE (CAAR)” shows the t-value for the observed CAAR. The t-value that we observed will then be analyzed with a five-percent level of significance. With a five-percent level of significance the critical value, for the t-value, becomes 1.96. With a level of significance and critical value set one can mark the days with significant results.

DAY	AAR	T-TEST (AAR)	CAAR	T-TEST (CAAR)
-10	-0,00378842	-1,904133237	-0,00378842	-1,904133237
-9	-0,000742908	-0,373399949	-0,004531328	-1,61045916
-8	7,96744E-05	0,040045869	-0,004451654	-1,291813905
-7	0,000805322	0,404770319	-0,003646332	-0,916358499
-6	-0,001661588	-0,835146276	-0,00530792	-1,193104727
-5	0,002357355	1,184852403	-0,002950565	-0,605436653
-4	-0,001196858	-0,601563928	-0,004147423	-0,787895215
-3	0,002148889	1,080072909	-0,001998534	-0,355145049
-2	0,001998534	1,00450189	0	0
-1	0,0029827	1,499162532	0,0029827	0,474076818
0	0,006524464	3,279321492	0,009507163	1,440767143
1	0,005992123	3,011757064	0,015499287	2,248848894
2	-0,0052852	-2,65644348	0,010214087	1,42385927
3	-0,001758873	-0,884043429	0,008455214	1,13579458
4	0,002392455	1,202494003	0,010847669	1,407764427
5	-0,000617619	-0,310427144	0,01023005	1,285455259
6	-0,001561689	-0,784934951	0,008668362	1,05670009
7	-0,00956529	-4,807699856	-0,000896929	-0,106257824
8	-0,00237321	-1,192821078	-0,003270139	-0,377075695
9	-0,00418959	-2,105768785	-0,007459728	-0,83839214
10	-0,004427649	-2,225422204	-0,011887378	-1,303813888

Table 1: Showing the AAR, CAAR and their respective t-values for every time-period.

As can be seen in the table above there are six occasions on the AAR where the test comes out significant, this was on day: 0, 1, 2, 7, 9 and 10. One should also note that only two (green background) out of those six had an AAR that was significantly larger then zero. The other four (red background) had an AAR that was significantly smaller then zero. On the other hand, in the column with the t-tests for the CAAR there is only one value of CAAR that was significantly different from zero, this was on day 1 (green background). That result was significantly larger than zero. The t-values can also be shown in a bar chart which may be easier to interpret. These bar charts are shown below with a green bar for a significant positive result and a red bar for a significant negative result. The non-significant values will just be shown as blue bars.

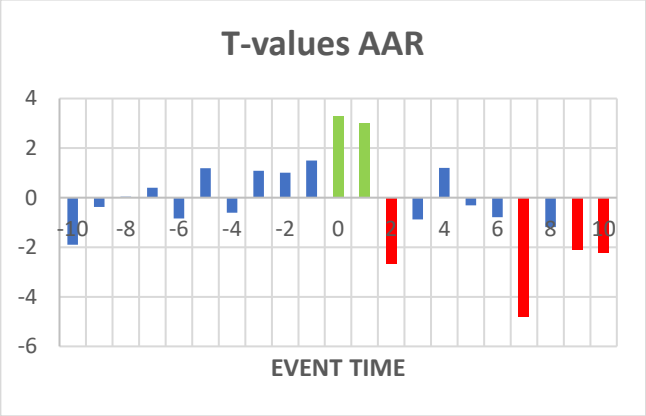

Figure 2: Showing the t-values for the AAR in a bar graph.

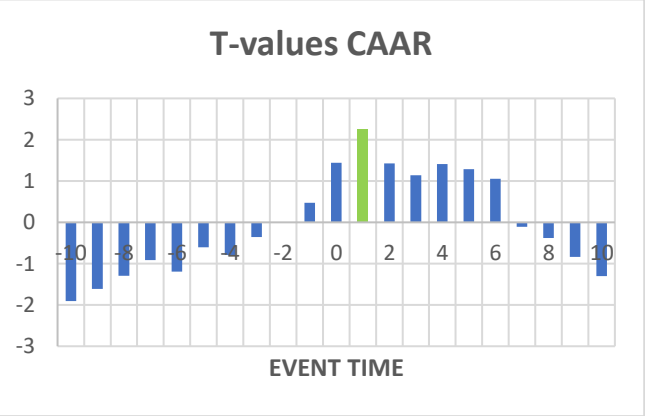

Figure 3: Showing the t-values for the CAAR in a bar graph.

One can also see these results by looking at the AAR and CAAR graphs. Below here is the graph for the results of the AAR. There are signs of our results of the t-test present in the graph of the AAR. One can see two high values of AAR observed on day zero and one. They were also the significant observations from the t-test. This gives an indication that something abnormal has happened there. Also, interesting to note is the significantly low observations on day two, seven, nine and ten. They are also visibly significant.

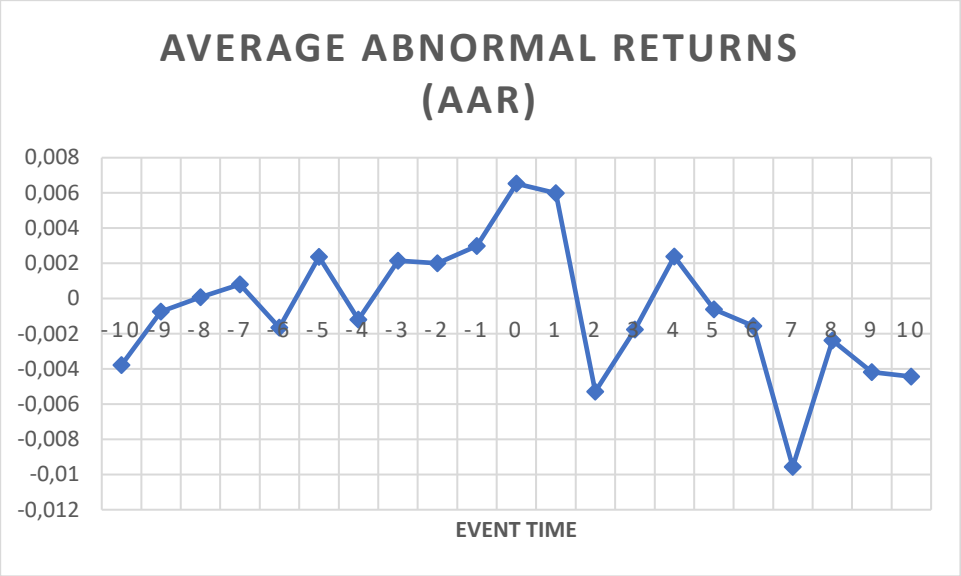

Figure 4: Showing the AAR-values in a line graph.

Below this is the graph for the CAAR. On this graph one can see that the result from our table with t-values is obvious. From the table with t-values the only significant result was found on day 1, this result is visibly apparent on the graph below. Something very interesting about this graph is the fact that the observed values for CAAR are all negative in the beginning (day -10 to day -3) but then after day -3 one can see a small but steady increase on both -2 and -1 before the announcement date. It would be interesting to further investigate this result since it seems as if the market expects something to happen.

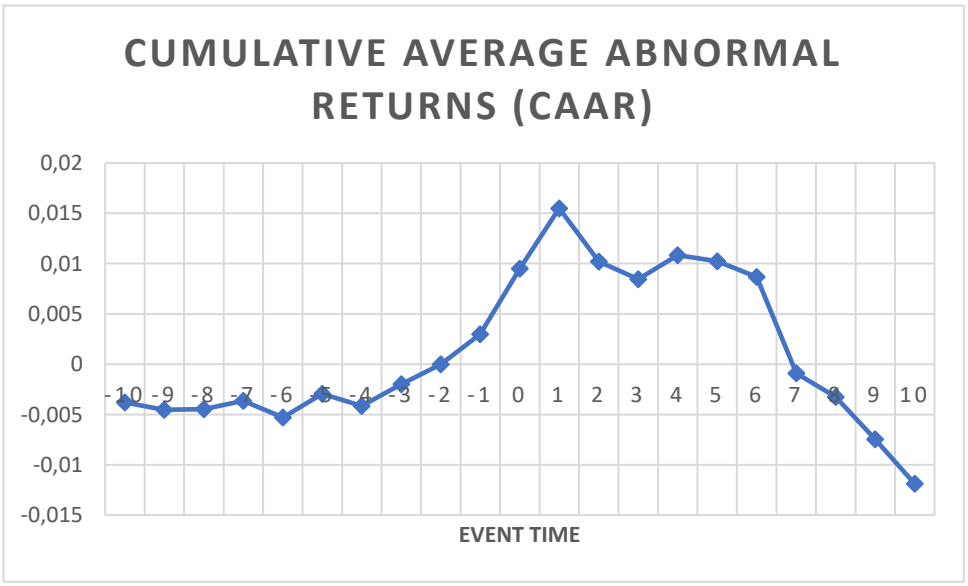

Figure 5: Showing the CAAR-values in a line graph.

5.2 Analyzing the results

I will analyze the results from both the AAR and CAAR. first part of the analysis will focus on the AAR results while the second part of my analysis will focus on the CAAR results.

By visually looking at the graph of the AAR one can already see that there might be a significant positive result around day 0 and 1. It is also quite clear that there might be some significant negative results especially around day 2 and 7 but also around day 9 and 10. The graph of the AAR can be backed up by the results in the table. In the table there are significant positive results on day 0 and 1 but also four significant negative results on day 2, 7, 9 and 10.

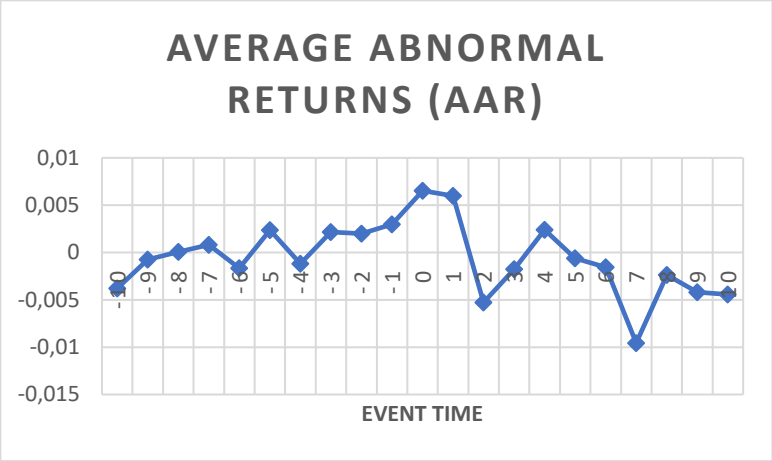

Figure 6 (same as figure 4): Showing the AAR-values in a line graph.

DAY	AAR	T-TEST (AAR)
0	0,006524464	3,279321492
1	0,005992123	3,011757064
2	-0,0052852	-2,65644348
3	-0,001758873	-0,884043429
4	0,002392455	1,202494003
5	-0,000617619	-0,310427144
6	-0,001561689	-0,784934951
7	-0,00956529	-4,807699856
8	-0,00237321	-1,192821078
9	-0,00418959	-2,105768785
10	-0,004427649	-2,225422204

Table 2: Showing a part of "Table 1" with the AAR-values and the t-test values for the AAR.

In this t-test we used a 5-percent level of significance which indicates a critical value of 1.96. If we first focus on the positive results, day 0 and 1, one can see that their critical values are approximately 3,28 for day 0 and 3,01 for day 1. The empirical rule is a rule that explains a way to understand a standard normal distribution, which is what we have. The rule is made up of three different levels. The first level says that approximately 68% of all data is within 1

standard deviation lengths from 0. The second level says that approximately 95% of all data is within 2 standard deviation lengths from 0. Lastly the final level says that approximately 99.7% of all data is found within 3 standard deviation lengths from 0. The two data points that we observed as statistically significant were both more than 3 standard deviation lengths away from 0. This indicates that the positive results were highly statistically significant.

This result is in line with the theory about market efficiency and previous research. The announcement of a special cash dividend did have a statistically significant positive effect on the abnormal returns. This shows that the market reacted positively to the news about the special cash dividend which is what was anticipated with the theory and earlier research.

On the other hand, one can also see the negative results on day 2, 7, 9 and 10. The test value for the AAR's on these days were -2.66, -4.81, -2.11 and -2.23. These are all statistically significant since we are using a 5-percent level of significance with 1.96 as the critical value. The negative result on day 2, test value of -2.66, can probably be explained by the positive results of the day before, as we showed earlier was significantly positive. Because of the significantly positive abnormal return the day before, traders would want to sell their stocks. When a lot of traders wants to sell their stocks the price of the stock will decrease and, in this case, it looks like the selling caused the stock to become negatively abnormal. As explained in my theory about dividend payment causing the price of the stock to go down one could think that the highly significant results on day 7, 9 and 10 could be related to the dividend payment. A special cash dividend is usually paid out close to its announcement since it is an extra dividend and not a yearly or monthly planned dividend.

In the case of the CAAR one can on the graph see a clear top on day one. This visual expectation is met with the results from the t-tests. On day 1 the test-value is 2.25 which indicates that the observed CAAR-value is significantly larger than 0. This is again as expected from the theory. The cumulative sum rises unexpectedly much on day 1 causing the t-test to be significant.

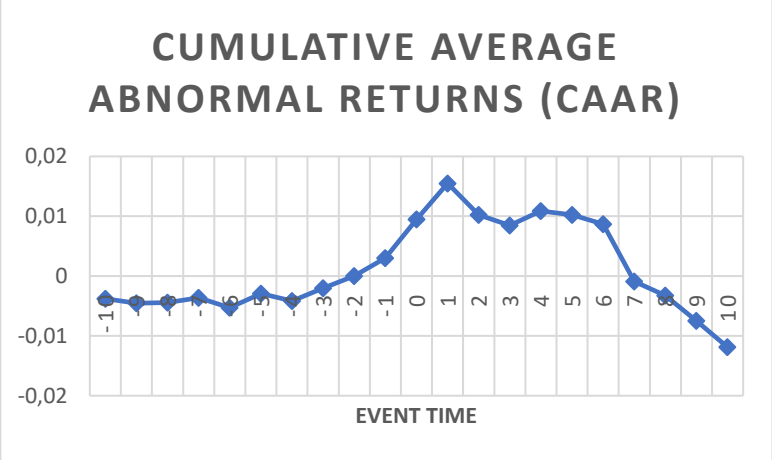

Figure 7 (same as figure 5): Showing the CAAR-values in a line graph.

DAY	CAAR	T-TEST (CAAR)
0	0,009507163	1,440767143
1	0,015499287	2,248848894
2	0,010214087	1,42385927
3	0,008455214	1,13579458
4	0,010847669	1,407764427
5	0,01023005	1,285455259
6	0,008668362	1,05670009
7	-0,000896929	-0,106257824
8	-0,003270139	-0,377075695
9	-0,007459728	-0,83839214
10	-0,011887378	-1,303813888

Table 3: Showing a part of "Table 1" with the CAAR-values and the t-test values for the CAAR.

Something that is worth noting as well is the increase in CAAR from day -3 to day -1 on the graph of CAAR. This could be an indication that the market expected an announcement or something similar soon. Another explanation could be leakages of information from the companies involved. I performed a t-test on the three-day interval between day -3 and -1. The t-value of this test came out to 2.07. With a 5-percent level of significance this t-value becomes statistically significant. This indicates that the market expectations or company leakages were significant.

6. Discussion

I would now like to bring forward some thoughts and question marks that appeared while analyzing the results. One of the first observations that was very interesting and not easy to explain was that there was a three-day period just before the announcement was made that was cumulative significant (from day -3 to day -1). What this result indicates is that somehow the market suspected something, either through a good understanding of the company or through leakages from the company itself. This result was also found in the work by Pegah Dehghani and Loo Sin Chun (2011) where they analyzed the Malaysian market. With both of our works finding this, statistically significant, result during the time-period just before an announcement is made, it could be interesting to look at it for future research. As discussed above about this result it might be due to leakages from the company itself or it might be derived from the company's results.

Another interesting observation that would be interesting to look at the time when the special cash dividend is paid out. With the efficient market theory, one would expect the price of the stock to fall by the size of the dividend. This result was discussed when looking at the negative statistically significant days. The efficient market theory could be the explanation for the negative results observed. This could also be looked at in future research.

7. Conclusion

To conclude his thesis, the results showed that there were statistically significant abnormal returns surrounding a special cash dividend announcement between the time-period of 2018-01-01 and 2023-01-01 on the NASDAQ GS. In the average abnormal returns, one could see that both on the day of the announcement and the day after that they were significantly larger than 0. This was also shown in the cumulative average abnormal returns where one could see a significant result on the day after the announcement was made. This result is also in line with previous research saying that a special cash dividend announcement is a positive message and that it should have a positive impact on the price of the stock. It also showed that the market is probably semi-efficient, which means that historical and public information is incorporated in the price of a stock. In the discussion I talked about leakages and that it could be the reason for the significant cumulative average abnormal returns observed just before the announcement. This could be looked at as “insider info” but if we had complete insider info then the market wouldn’t experience the abnormal returns on the day of the announcement or the day after.

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