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# Investor Reaction to Female Executive Appointment in Low and High Growth Firms

## An event study

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**Abstract**

The objective of this study is to investigate investors' reaction to the appointment of a female CEO/CFO and the influence of revenue growth on the reaction. Previous research has mixed findings regarding the announcement of a female CEO or CFO. The expectations are based on the risk-averse behaviour of female directors and the notion that firms need different amount of risk-taking depending on the growth of the firm. This paper will fill the literature gap by researching this effect on 112 appointments of female CEO or CFO. The results of this study show that the appointment of a female director receives a different reaction from investors when the company is classified as a low growth firm compared to a high growth firm. On average low growth firms receive a positive reaction, while high growth firms receive a negative reaction. These findings are in line with the literature stating that low growth firms need low levels of risk taking and due to the risk-averse behaviour of female directors, low growth firms will benefit from a female director.

## 1. Introduction

Whenever there is a woman in the boardroom of a top 200-company, chances are that she is there to serve the coffee (Wageman, 2018). Although, as of 2020 the number of female CEOs of Fortune 500 companies has hit an all-time high of 37, it only accounted for 7.4%. (Hinchliffe, 2020). The difference in representation between male and female is often seen as the result of the "glass ceiling" a term first introduced by Hymowitz and Schellhardt (1986). The term refers to the invisible barriers that prevent women and minorities from assuming positions at the top of corporate hierarchies. The question remains if the appointment of a female senior manager is regarded differently than their male counterparts.

Research shows that CEO change has a positive effect on stockholder wealth (Adams & Mansi, 2009). The debate is still going on whether gender influences the perceived benefits of an executive turnover. Lee and James (2007) find that investors respond more negatively to the appointment of a female CEO compared to a male CEO while Brinkhuis and Scholtens (2017) find that there is no statistical difference between the appointment of a male executive compared to female. Interestingly, other research shows that investors respond positively to the appointment of a female CEO (Cook & Glass, 2011). The difference in research results suggests there are dimensions that could influence investor reactions. Research shows reactions of investors to woman who are appointed from within the firm are less negative than woman outside the firm (Lee and James, 2007). In addition, the appointment of a female CEO in a male dominated industry is valued less positive than when a female CEO is appointment in female dominated industry (Cook and Glass, 2011). However, revenue growth has not been

investigated in the context of CEO or CFO appointment while the characteristics of a senior manager could influence the risk taking and thus revenue growth (Guo & Jiang, 2019).

From previous research we conclude that there is still no consensus on whether the valuation of executive appointment is influenced by gender and the moderating effect of the revenue growth of the firm. The revenue growth is an interesting moderator, due to the fact that female directors tend to show different risk-taking behaviour compared to their male counterparts and risk-taking has different priorities in different firm growth stages (Guo & Jiang, 2019; Faccio et al., 2016). Therefore, this paper will fill the gap in the literature by investigating the revenue growth of the firm the female executive is appointed to. This topic is important to investigate, because it could show a hidden bias in investors reactions and reveal their attitude towards female executives running high growth firms. The distinction will contribute to the discussion about the value of female directors.

Therefore, this paper will investigate the following research question: *What is the effect of the announcement of a female executive on security prices and to what extent do the results differ when the firm has low or high growth?*

In this paper I will focus on the announcement of a female CEO or CFO and the impact on security prices with a distinction between low and high growth firms. The objective of this paper is to provide empirical evidence on the valuation of the appointment of a female senior manager through an event study. The event study has its roots in the strong efficient market hypothesis (EMH) which states that all security prices fully reflect the available information (Fama, 1991). Therefore, we can assume that investors properly value the available information and will handle accordingly. The aim of this paper is to research the possible effects of the appointment of a female executive and the moderating effect of revenue growth on the valuation of the announcement.

The empirical strategy I will use in this paper is a combination of an event study methodology and cross-sectional analysis to investigate the difference between shareholders response with regard to low and high growth firms. The distinction between the firm growth will be based on the median revenue growth in the sample and discussed further in the following section.

The remainder of this paper is organized as follows: First, I will provide the background literature and formulate the hypotheses. Second, I detail methods to test the hypotheses and present the data. Thirdly, I present the results and discuss the outcome. Finally, I summarize the findings and give a conclusion.

## 2. Literature Review

### *2.1 Senior management change*

The connection between CEO change and financial market performance is examined thoroughly. Despite this thorough research a consensus has not been reached yet. Pessarossi and Weill (2013) and Huson, Malatesta, Parrano (2004) conclude that the appointment of a new CEO has a positive effect on the market performance. Nino and Romero (2007) and Brinkhuis and Scholtens (2017) show that investors are indifferent about CEO change, while Dedman and Lin (2002) and Lee and James (2003) conclude that investor reaction is predominantly negative when it comes to new CEO appointments. CEO characteristics, such as age, gender and insider status seem to play a major role in investor reactions to a CEO appointment, whereby being female has a more negative effect than being male (Lee & James, 2007). In addition, research shows that on average firms that have female directors have superior performance to firms that do not have female directors (Khan & Vieito, 2013; Pasaribu, 2017). This information should result in a positive reaction to the appointment of a female CEO. Due to the differences in results of the various papers I will research if there is an effect altogether of the appointment of a female CEO/CFO. Therefore, the first hypothesis is:

***Hypothesis 1**: The appointment of a female CEO or CFO has an effect on the firms' short term stock performance.*

### *2.2 Female characteristics and risk taking*

Previous research on gender and financial performance mainly focusses on gender diversity on the board and highlights the positive effect of female representation (Campbell & Vera, 2009; Adams & Ferreira, 2009). This positive effect indicates that competent female directors are not merely substitutes for traditional directors, but have unique attributes that create added value for the firm (Carter et al., 2010). Byron and Post (2016) state that female directors introduce different cognitive frames to the firm because of differences in values, prior experience and knowledge. For example, research shows that when it comes to investing, women make smaller investments in a risky asset than men do and appear to be financial more risk averse (Charness & Gneezy, 2012). Normally, high risk implies high returns. Nonetheless, risk comes with an increased variance of the return of investment. Therefore, investors should take into account the risk-taking capabilities when evaluating the risk-taking behaviour of the firm (Tsai & Laun, 2016). In other words, the amount of risk-taking that is needed for the specific firm is dependent on the firm characteristics.

Guo and Jiang (2019) show that firm growth influences risk-taking and that this risk-taking in turn influences new product success. Risk-taking is the extent to which the identified opportunities are acted upon (Guo & Jiang, 2019). Interestingly, new product success, and thus further revenue increase, benefits most from a high level of risk-taking when growth is high, but a low level of risk-taking when growth is low. Consequently, it is expected that low growth firms benefit from female CEO's or CFO's. Faccio et al. (2016) show that this is indeed the case. Firms run by female directors tend to have lower leverage, thus lower volatility, which increases the likelihood of survival. However, sales growth is lower compared to firms run by male directors. Consequently, the revenue growth of the firm and the gender of the appointed CEO or CFO is important information to the investors. In other words, the risk-averse behaviour of female directors could influence the investors' perception of the value of a female executive. Therefore, the second hypothesis will be:

***Hypothesis 2:*** *The effect of the announcement of a female CEO or CFO is influenced by the revenue growth of the firm.*

## 3. Data and Methodology

This research will use an event study approach. The data and methodology section explains the background of the methodology, data collection and the sampling. In an event study the short-term price behaviour of stock prices around specific events is examined (MacKinlay, 1997). The intuition behind event studies comes from the efficient market theory. In an efficient market the price of a security is a good estimate of the intrinsic value of that particular security (Fama, 1995). Research shows that the stock market is efficient to the extent that the stock prices adjust rapidly to new information (Fama et al., 1969). Consequently, when the appointment of a new CEO/CFO is announced the relevant information will rapidly be included in the valuation of the intrinsic value of the security.

### *3.1 Sample and data construction*

I obtained a sample of announcements of senior management position changes from Orbis, which includes CEO, CFO, COO, President and Executive vice president, between 2010 and 2020. I made a conscious decision for this time frame, so that the Great Recession, which ended in 2009 according to the IMF (2010), does not influence stock market performance. The data provides the necessary starting dates of the senior manager and company names. I filtered for the management positions CEO and CFO, which are regarded as the two most important senior management positions (Feng et al., 2011). This procedure resulted in 163 results. The announcement dates were verified with Nexis Uni and corresponding company websites. Due

to accompanying events such as earnings, 18 events were removed and three events were removed, because the gender of the CEO/CFO did not match the database. Thereafter, Eikon was used to obtain the relevant data of the particular securities, namely revenue growth, computed from the announced revenues from years prior to the event, and security prices. In addition, another 20 events were removed due to the lack of stock price data which is needed for the estimation of the market model parameters. This procedure resulted in 122 unique announcements. For the second hypothesis, due to the small sample size and the massive influence of outliers in such a small sample, the outliers were removed from the sample. The outliers in this case are companies that merged; therefore, their revenue grew extremely, or companies that encountered extreme circumstances during the three years prior to the event. Consequently, these companies were excluded resulting in a dataset of 112 companies.

The stock market data includes only trading days, meaning that non-trading days such as holidays and weekends have no data. However, due to the uncertainty of a day being a holiday or missing values in the database, it is decided that all the empty values of the stock data are filled by carrying on the last observation. This method has no influence on the stock returns, because the returns will be zero for those days. Consequently, they are not counted when estimating the model.

### *3.2 Event Study methodology*

The key factor of an event study is the abnormal return. The abnormal return allows us to examine the difference the announcement makes by taking the difference between the expected return and the actual return. The abnormal return can therefore be written as:

$$\mathrm{AR_{i,t}} = \mathrm{R_{i,t}} - \mathrm{E}\left(\mathrm{R_{i,t}} \middle| \mathrm{X_t}\right) \tag{1}$$

where $\mathrm{AR_{i,t}}$ is the abnormal return, $\mathrm{R_{i,t}}$ is the actual return and $\mathrm{E}\left(\mathrm{R_{i,t}} \middle| \mathrm{X_t}\right)$ is the expected or normal return for period *t.* The event day (*t=0)* is the day the company released a press statement announcing the naming of a new top executive. The returns are calculated as:

$$\mathrm{R_{i,t}} = \frac{P_{i,t}}{P_{i,t-1}} - 1 \tag{2}$$

where $P_{i,t}$ and $P_{i,t-1}$ are closing prices of security *i* and periods *t* and *t-1* respectively.

*3.1.1 Constant mean return model*

The estimation of the expected return can be approached in three ways (Brown & Warner, 1985). First, the simplest way is to use the *constant mean return model* as described by Mackinlay (1997). This model assumes that the expected return is equal to the mean return in the estimation window. Consequently, the abnormal return is calculated as:

$$AR_{i,t} = R_{i,t} - \overline{R_{i,t}} \tag{3}$$

where $R_{i,t}$ is the return on a particular day and $\overline{R_{i,t}}$ is the average return of the security in the estimation window.

*3.1.2 Market-adjusted model*

Second, the adjusted market model can be used whereby the expected return is estimated as the market return. However, this model assumes that the return of the security is perfectly correlated with the market return. The abnormal return is then calculated as

$$AR_{i,t} = R_{i,t} - R_{m,t} \tag{4}$$

where $R_{i,t}$ is the return of the security on a particular day and $R_{m,t}$ is the return of the market on the same day.

*3.1.3 Market- and risk-adjusted model*

Third, the market model described by Mackinlay (1997) and Brown and Warner (1985) can be used. The market model relates the market portfolio to the security in order to establish a linear relationship between the two. The expected return of a security is therefore equal to

$$E(R_{i,t} | X_t) = \hat{\alpha}_i + \hat{\beta}_i R_{m,t} \tag{5}$$

where $\hat{\alpha}_i$ is the intercept and $\hat{\beta}_i$ is the systemic market risk and the slope of the regression. Thus, the calculation of the abnormal return becomes:

$$AR_{i,t} = R_{i,t} - (\hat{\alpha}_i + \hat{\beta}_i * R_{m,t}) \tag{6}$$

In both the adjusted market model and the market model a broad market index is used to calculate the returns. The index of choice depends on the country the security is listed in. By using the index of a certain country, one tries to avoid the risk of generalizing different market conditions. This paper will include all three models in the results to assess the difference between the three models. However, only the market model will be used for testing due to the fact that it is characterized by a reduction in variance of the abnormal returns. Important to notice is that the reduction in variance of the abnormal return is the greatest when the $R^2$ of the market model regression is high. Therefore, the benefits of using the market model over the constant mean model are only visible if the $R^2$ of the market model regression is high (MacKinlay, 1997).

Due to the fact that there are more securities with a similar event the average abnormal returns need to be obtained. The calculation of the average abnormal return on day *t* is:

$$\mathrm{AAR_t} = \frac{\sum_{\mathrm{i=1}}^{\mathrm{N}} \mathrm{AR_{i,t}}}{\mathrm{N}} \tag{7}$$

where *N* is the number of events.

As suggested by MacKinlay (1997) this event study uses cumulative abnormal returns due to the uncertainty about the exact date the information is included in the price of the security. As a result, a combination of cumulative abnormal returns and a multiple-event window is used and analysed. The cumulative average abnormal return is calculated by dividing the aggregate individual CARs by the number of events where the cumulative abnormal return for security *i* over the event window is:

$$\mathrm{CAR_i(T_1, T_2)} = \sum_{T_1}^{T_2} AR_{i,t} \tag{8}$$

where $\mathrm{T_1}$ is the first day of the event window and $\mathrm{T_2}$ the last day of the event window. The estimation period is chosen as [-170, -21] where day 0 is the announcement day. This estimation period is similar to Pessarossi and Weill (2013).

In this paper both parametric and non-parametric tests are applied to determine the significance of the results. First, normality of the abnormal return are tested using the Jarque-Bera test. Second, significance of the AARs and CAARs are examined where a standardized cross-sectional test is applied which considers the event-induced variance difference. Third, the non-parametric Corrado Rank test is applied to assure outliers do not influence the significance. In addition, tests are conducted on the low growth and the high growth firm dimension to assess the difference between the groups. To test the difference between the

groups a two sample t Test is applied, with the assumption that the difference between the two samples will be zero.

As mentioned before, the sample consists of a total of 112 firms. Table 1 displays an analysis of the main characteristics of the firm data used to divide the firms. The table shows market capitalisation of the average firm in the sample is 9.9 billion dollar with a median of 1.9 billion dollar. Furthermore, the revenue growth of 3 years before the event is displayed with an average growth of 9.6% and a median of 4.0%. Just as the market capitalisation, the revenue growth is skewed, however not as much as the market capitalisation. Dividing the sample of firms low and high growth firms will therefore be done by taking the median revenue growth. By taking the median instead of the mean, the division will best represent the centre of the distribution, and the two samples will have an equal number of appointments e.g., 56.

**Table 1** – Firm Characteristics

| | Market capitalisation (1000 USD) | Revenue growth (3 years before event) |
|---|---|---|
| Mean | 9891612.47 | 0.0589 |
| Median | 1864067.97 | 0.0401 |
| Standard Deviation | 2711940.83 | 0.1319 |
| Minimum | 5342.55148 | -0.2411 |
| Maximum | 275503006 | 0.5264 |
| Skewness | 6.92806908 | 1.0346 |

*Source: made by the author based on data downloaded from Thomson Reuters Eikon*

Consequently, firms with a revenue growth lower than 4.0% will be regarded as low growth firms and firms above this threshold will be marked as high growth firms. It is important to notice that other studies have categorized the firm growth in three separate categories. This separation was not only based on revenue growth, but also on the number of years in operation. (Guo & Jiang, 2019). However, to come to a conclusion based on the actual growth, I decided to only take the revenue growth into consideration and leave the number of years out of the equation. Appendix A shows additional information on the dataset, with frequencies of industry, role, year and country. CEOs and CFOs account for 40% and 60% respectively of the dataset. In addition, it is important to notice that almost 50% of the firms is located in the United States.

## 4. Results

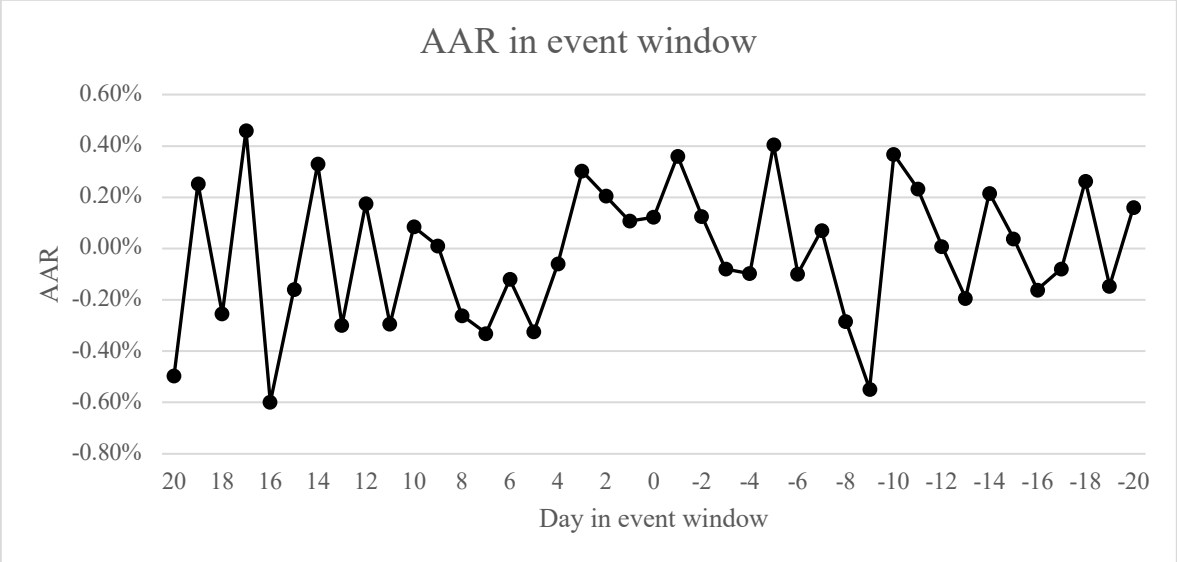
Table 2 presents the difference in AAR in the event window between the three models mentioned by Brown and Warner (1985). All models show an increase of the AAR on day *t=-1* from the day before, while the days from *t=0* until *t=2* show a lower AAR than *t=-1*. This difference could signal a potential negative effect of the announcement. Figure 1 shows the development of the AAR for the whole sample. During the event window of [-3,3] the AAR seems to develop more positively than before and after the same window. The trend of the fluctuating AAR before and after *t=-3* and *t=3* respectively signals a change in sentiment.

**Table 2 – Model differences**

| | Mean Adjusted Model | | Market Adjusted Model | | Market Model | |
|---|---|---|---|---|---|---|
| Day | AAR (%) | percentage positive | AAR (%) | Percentage Positive | AAR (%) | Percentage Positive |
| -3 | -0.2365 | 45.00 | -0.1251 | 41.67 | -0.0357 | 48.33 |
| -2 | 0.0441 | 40.00 | 0.2096 | 46.67 | 0.1504 | 41.67 |
| -1 | 0.3333 | 51.76 | 0.3972 | 54.12 | 0.3689 | 55.29 |
| 0 | 0.2322 | 46.61 | 0.0395 | 48.72 | 0.1388 | 49.57 |
| 1 | 0.0059 | 44.23 | -0.0500 | 49.51 | 0.1120 | 47.00 |
| 2 | -0.1771 | 47.56 | -0.2677 | 50.00 | 0.1957 | 48.15 |
| 3 | 0.2441 | 56.72 | 0.3889 | 58.46 | 0.3452 | 59.09 |

*Source: made by the author based on data downloaded from Thomson Reuters Eikon*

**Figure 1**




*Source: made by the author based on data downloaded from Thomson Reuters Eikon*

As can be seen in table 3 the normality of the all the AARs in the window [-3, 3] are rejected, the p value of the Jarque-Bera test is statistically highly significant, therefore there is strong evidence that the AARs are non-normally distributed. Consequently, the Corrado test is stronger on this data set. Figure 1 signals a trend change in the window [-3,3], however only the AAR on day *t=3* is statistically significant on the cross-sectional test at the 10% level. Nonetheless, due to the non-normality and the insignificance of the Corrado test results, the conclusion is made that it is not a significant AAR. In addition, table 4 shows that no event window has a statistically significant CAAR.

As expected, the p-value for the cross-sectional test and the Corrado test differ, due to the non-normality of the data. Nonetheless, both tests do not result in a significant p-value. Hence, the null regarding our hypothesis that there is no effect of the announcement of a female CEO or CFO, cannot be rejected. Therefore, in line with Cook and Glass (2011), but in contrast with Lee and James (2007), the conclusion is that there are no statistically significant abnormal returns regarding the announcement of a female CEO or CFO change. Consequently, the information seems value irrelevant to the investor.

**Table 3 – AAR Summary of the Total Sample**

Average abnormal returns of the total sample of 112 firms.

| Day | AAR (%) | Percentage of positive AAR | Jarque-Bera test (p-value) | Standardized cross-sectional t-test (p-value) | Corrado Rank test (p-value) |
|---|---|---|---|---|---|
| -3 | -0.0357 | 48.33 | 0.0000*** | 0.8758 | 0.3282 |
| -2 | 0.1504 | 41.67 | 0.0000*** | 0.6444 | 0.3437 |
| -1 | 0.3689 | 55.29 | 0.0000*** | 0.2034 | 0.5845 |
| 0 | 0.1388 | 49.57 | 0.0000*** | 0.5707 | 0.9372 |
| 1 | 0.1120 | 47.00 | 0.0000*** | 0.5490 | 0.7842 |
| 2 | 0.1957 | 48.15 | 0.0000*** | 0.4396 | 0.5279 |
| 3 | 0.3452 | 59.09 | 0.0001*** | 0.0921* | 0.2338 |

*Note: Statisical significance at the 1%, 5%, 10% levels is indicated by ***, **, and *. Source: made by the author based on data downloaded from Thomson Reuters Eikon*

**Table 4 – CAAR Summary of Total Sample**

Average cumulative abnormal returns of the total sample of 112 firms.

| CAAR window | CAAR (%) | Standardized cross-sectional t-test (p-value) | Corrado Rank test (p-value) |
|---|---|---|---|
| [-2;+2] | 0.2822 | 0.5000 | 0.3795 |
| [-2;+1] | 0.1160 | 0.7339 | 0.4627 |
| [-1;+1] | 0.1487 | 0.6394 | 0.5853 |
| [-1;+2] | 0.3145 | 0.4008 | 0.4628 |
| [-1;+3] | 0.4880 | 0.2001 | 0.3485 |
| [0;+1] | 0.0345 | 0.9062 | 0.7552 |
| [0, 2] | 0.2011 | 0.5555 | 0.6350 |

*Note: Statisical significance at the 1%, 5%, 10% levels is indicated by ***, **, and *. Source: made by the author based on data downloaded from Thomson Reuters Eikon*

Next, the second hypothesis regarding the effect of the announcement of female CEO or CFO in low or high growth firms is examined. The results of the difference in AARs are presented in table 5, where the difference is calculated as the absolute difference between the AAR of the low growth firm and the high growth firm. Event day (t=0) shows a significance at the 10% level, signalling a statistically significant difference on that day. In addition, table 6 shows significance over multiple windows. The windows [-2;+2] and [-2;+1] are significant at the 95% level and the event windows [-1;+1] and [-1;+2] are significant at the 90% level. This implies that there is indeed a statistically significant difference between the low growth firms and the high growth firms. Furthermore, every CAAR of the high growth firms is negative, while the opposite is true for the low growth firms. Additionally, Figure 2 shows a regression based on the [-2;+2] CAAR window. The regression shows a negative coefficient, meaning that as the revenue growth increases, the CAAR decreases signalling a difference between low and high growth firms. However, as shown in appendix A the coefficient of the independent variable *revenue growth* is not significant with a p-value of 0.16 meaning that there is a chance that the variable is not a good predictor in the model. Nonetheless, the slope of the coefficient coincides with the findings from the mean difference test.

**Table 5 – AAR difference between low and high growth firm**

| day | AAR High growth Firm (%) | AAR Low growth firm (%) | AAR difference (%) | t Stat | P-value |
|---|---|---|---|---|---|
| -3 | -0.2350 | 0.2322 | 0.4672 | -1.2259 | 0.2278 |
| -2 | -0.3200 | 0.2235 | 0.5435 | -0.7877 | 0.4369 |
| -1 | -0.0337 | 0.2225 | 0.2562 | -0.2845 | 0.7773 |
| 0 | -0.3505 | 0.4675 | 0.8179 | -1.8523 | 0.0668* |
| 1 | -0.1486 | 0.0678 | 0.2163 | -0.6560 | 0.5137 |
| 2 | 0.0387 | 0.5441 | 0.5054 | -0.6668 | 0.5071 |
| 3 | 0.5233 | 0.0785 | 0.4448 | 1.2747 | 0.2078 |

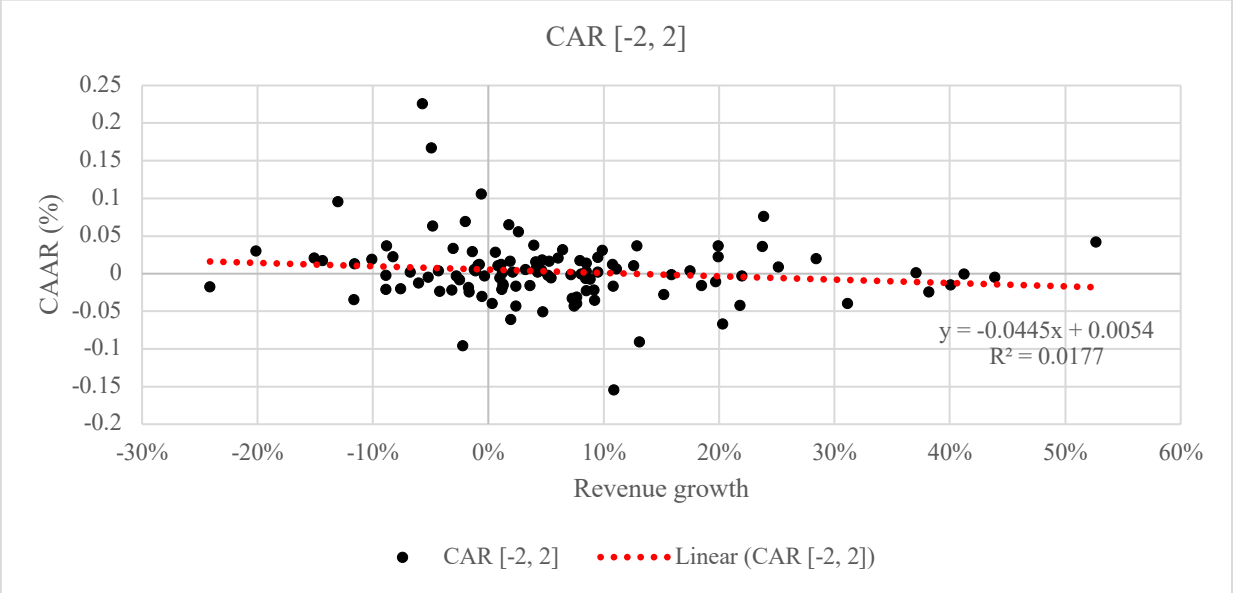
*Note: Statisical significance at the 1%, 5%, 10% levels is indicated by ***, **, and *. Source: made by the author based on data downloaded from Thomson Reuters Eikon*

**Table 6 – CAAR difference between low and high growth firm**

| CAAR window | CAAR high growth (%) | CAAR low growth (%) | CAAR difference (%) | T Stat | P-value |
|---|---|---|---|---|---|
| [-2;+2] | -0.5632 | 1.1276 | 1.6908 | -2.0566 | 0.0424** |
| [-2;+1] | -0.5956 | 0.8406 | 1.4362 | -2.1392 | 0.0348** |
| [-1;+1] | -0.4424 | 0.7505 | 1.1929 | -1.9048 | 0.0595* |
| [-1;+2] | -0.4100 | 1.0391 | 1.4491 | -1.9681 | 0.0517* |
| [-1;+3] | -0.1096 | 1.0856 | 1.1952 | -1.5894 | 0.1149 |
| [0;+1] | -0.5111 | 0.6003 | 1.1114 | -1.9209 | 0.0574* |
| [0, 2] | -0.4787 | 0.8808 | 1.3595 | -2.0269 | 0.0452** |

*Note: Statisical significance at the 1%, 5%, 10% levels is indicated by ***, **, and *. Source: made by the author based on data downloaded from Thomson Reuters Eikon*

**Figure 2**




*Source: made by the author based on data downloaded from Thomson Reuters Eikon*

As suggested by MacKinlay (1997) event studies should use CARs if the exact date of the incorporation of the information is unknown. In combination with the different statistically significant CAAR windows and the regression model, I conclude that there is enough statistical evidence to reject the null that there is no difference between low and high growth firms. These results support the reasoning that firms in different growth stages need different risk-taking behaviour (Guo & Jiang, 2019) and that female directors are perceived to be beneficial to low growth firms (Faccio et al., 2016).

## 5. Conclusion

The research question of this paper is: *What is the effect of the announcement of a female executive on security prices and to what extent do the results differ when the firm has low or high growth?* The results show no statistically significant effect of the announcement of the appointment of a female CEO or CFO. Consequently, there is not enough evidence that the information influences the value of the security, thus hypothesis 1: *The appointment of a female CEO or CFO has an effect on the firm's short term stock performance* is rejected.

However, the results do show a significant difference between the low growth firms and the high growth firms, whereby the announcement has a more positive effect on low growth firms than on high growth firms. This supports hypothesis 2: *The effect of the announcement of a female CEO or CFO is influenced by the revenue growth of the firm*. In conclusion, while the effect of the announcement of a female CEO or CFO is not significant, the difference between the effect on the low growth firm and the high growth firm is. This implies that

investors perceive the qualities of a female director more useful to low growth firms than to high growth firms.

## 6. Discussion

### *6.1 Results*

In this paper parametric and non-parametric as well as two and single sample t tests are performed. In combination with the regression model, the results paint a complete picture. I presume that if my research would be repeated in the same manner the results will not differ. However, the Orbis database contained some errors regarding gender and role in the company, which were corrected in the final dataset, but some errors may have been missed.

### *6.2 Implications*

The fact that the announcement of a female CEO or CFO has no statistically significant effect is typical for the strand of literature, where the results seem to differ in terms of significance (Pessarossi & Weil, 2013; Huson & Malatesta, 2004; Dedman & Lin, 2002; Lee & James, 2007). More importantly is the difference between the low growth firm and high growth firm. The supposed risk-averse behaviour of women combined with the statement of Guo and Jiang (2019) that firms in different growth stages need different forms of risk, supports the notion that women bring different qualities to a company and are based on those qualities.

### *6.3 Limitations and future research.*

While the dataset used in this paper is more than 4 times that of Lee and James (2007), the dataset can still be a limitation. The possibility exists that the sample is too small to generalize for the whole population. In addition, due to time limitation and the size of the paper, not every aspect is taken into account. For example, Adams and Mansi (2008) use forced turnover and insider or outsider status to create extra dimensions. Furthermore, additional analysis could be done on country, role, years and industry. Future research could also focus on the characteristics of the newly appointment senior manager, such as their actual risk-taking behaviour instead of gender.

So next time the low growth firm whose stock you own announces the appointment of a female CEO or CFO, applaud it as all the other investors do.

**References**


Adams, J. C., & Mansi, S. A. (2009). CEO turnover and bondholder wealth. Journal of Banking & Finance, 33(3), 522–533. https://doi.org/10.1016/j.jbankfin.2008.09.005

Adams, R. B., & Ferreira, D. (2009). Women in the boardroom and their impact on governance and performance☆. *Journal of Financial Economics*, *94*(2), 291–309. https://doi.org/10.1016/j.jfineco.2008.10.007

Adams, R. B., & Funk, P. (2012). Beyond the Glass Ceiling: Does Gender Matter? *Management Science*, *58*(2), 219–235. https://doi.org/10.1287/mnsc.1110.1452

Brinkhuis, E., & Scholtens, B. (2017). Investor response to appointment of female CEOs and CFOs. The Leadership Quarterly, 29(3), 423–441. https://doi.org/10.1016/j.leaqua.2017.08.002

Brown, S. J., & Warner, J. B. (1985). Using daily stock returns. *Journal of Financial Economics*, *14*(1), 3–31. https://doi.org/10.1016/0304-405x(85)90042-x

Byron, K., & Post, C. (2016). Women on Boards of Directors and Corporate Social Performance: A Meta-Analysis. *Corporate Governance: An International Review*, *24*(4), 428–442. https://doi.org/10.1111/corg.12165

Campbell, K., & Minguez Vera, A. (2009). Female board appointments and firm valuation: short and long-term effects. *Journal of Management & Governance*, *14*(1), 37–59. https://doi.org/10.1007/s10997-009-9092-y

Charness, G., & Gneezy, U. (2012). Strong Evidence for Gender Differences in Risk Taking. *Journal of Economic Behavior & Organization*, *83*(1), 50–58. https://doi.org/10.1016/j.jebo.2011.06.007

Cook, A., & Glass, C. (2011). Leadership change and shareholder value: How markets react to the appointments of women. Human Resource Management, 50(4), 501–519. https://doi.org/10.1002/hrm.20438

Comte, T. E., & Mihal, W. L. (1990). CEO turnover: Causes and interpretations. *Business Horizons*, *33*(4), 47–51. https://doi.org/10.1016/0007-6813(90)90057-i

Croson, R., & Gneezy, U. (2009). Gender Differences in Preferences. *Journal of Economic Literature*, *47*(2), 448–474. https://doi.org/10.1257/jel.47.2.448

Dedman, E., & Lin, S. W. J. (2002). Shareholder wealth effects of CEO departures: evidence from the UK. *Journal of Corporate Finance*, *8*(1), 81–104. https://doi.org/10.1016/s0929-1199(01)00027-x

Faccio, M., Marchica, M. T., & Mura, R. (2016). CEO gender, corporate risk-taking, and the efficiency of capital allocation. Journal of Corporate Finance, 39, 193–209. https://doi.org/10.1016/j.jcorpfin.2016.02.008

Fama, E. F., Fisher, L., Jensen, M. C., & Roll, R. (1969). The Adjustment of Stock Prices to New Information. *International Economic Review*, *10*(1), 1. https://doi.org/10.2307/2525569

Fama, E. F. (1991). Efficient Capital Markets: II. The Journal of Finance, 46(5), 1575–1617. https://doi.org/10.1111/j.1540-6261.1991.tb04636.x

Feng, M., Ge, W., Luo, S., & Shevlin, T. (2011). Why do CFOs become involved in material accounting manipulations? *Journal of Accounting and Economics*, *51*(1–2), 21–36. https://doi.org/10.1016/j.jacceco.2010.09.005

Guo, Z., & Jiang, W. (2019). Risk-taking for entrepreneurial new entry: risk-taking dimensions and contingencies. *International Entrepreneurship and Management Journal*, *16*(2), 739–781. https://doi.org/10.1007/s11365-019-00567-8

Hinchliffe, E. (2020, May 20). The number of female CEOs in the Fortune 500 hits an all-time record. Fortune. https://fortune.com/2020/05/18/women-ceos-fortune-500-2020/

Huson, M. R., Malatesta, P. H., & Parrino, R. (2004). Managerial succession and firm performance. *Journal of Financial Economics*, *74*(2), 237–275. https://doi.org/10.1016/j.jfineco.2003.08.002

Hymowitz, C., & Schellhardt, T. D. (1986, March 24). The glass ceiling. The Wall Street Journal. Special Report on the Corporate Woman.

Huson, M. R., Malatesta, P. H., & Parrino, R. (2004). Managerial succession and firm performance. *Journal of Financial Economics*, *74*(2), 237–275. https://doi.org/10.1016/j.jfineco.2003.08.002

IMF. (2010, April). *World Economic Outlook*. https://www.imf.org/~/media/Websites/IMF/imported-flagship-issues/external/pubs/ft/weo/2010/01/pdf/_textpdf.ashx

Khan, W. A., & Vieito, J. P. (2013). Ceo gender and firm performance. *Journal of Economics and Business*, *67*, 55–66. https://doi.org/10.1016/j.jeconbus.2013.01.003

Lee, P. M., & James, E. H. (2007). She'-e-os: gender effects and investor reactions to the announcements of top executive appointments. Strategic Management Journal, 28(3), 227–241. https://doi.org/10.1002/smj.575

Niño, J., & Romero, J. P. (2007). How the Change of CEO Affects Chilean Companies' Stock Returns. *Latin American Business Review*, *8*(1), 37–64. https://doi.org/10.1300/j140v08n01_02

Pasaribu, P. (2017). Female Directors and Firm Performance: Evidence from UK Listed Firms. *Gadjah Mada International Journal of Business*, *19*(2), 145. https://doi.org/10.22146/gamaijb.15619

Pessarossi, P., & Weill, L. (2013). Does CEO turnover matter in China? Evidence from the stock market. *Journal of Economics and Business*, *70*, 27–42. https://doi.org/10.1016/j.jeconbus.2013.04.003

Tsai, H. F., & Luan, C. J. (2016). What makes firms embrace risks? A risk-taking capability perspective. *BRQ Business Research Quarterly*, *19*(3), 219–231. https://doi.org/10.1016/j.brq.2016.01.002

Wageman, S. (2018, January 26). Vrouwen benoemen is bekeren (meer dan 80 CFO's beschikbaar) - Executive Finance -. Executive Finance. https://executivefinance.nl/2018/01/vrouwen-benoemen-is-bekeren-meer-dan-80-cfos-beschikbaar/

## APPENDIX A

Frequency table (industries, roles, years, countries) of all firms 112.

| Industry | % | Role | % | Years | % | Country | % |
|---|---|---|---|---|---|---|---|
| Banking, Insurance & Financial Services | 4.92 | CEO | 40.16 | 2010 | 10.66 | Australia | 3.28 |
| Biotechnology and Life Sciences | 2.46 | CFO | 59.84 | 2011 | 22.95 | Belgium | 3.28 |
| Business Services | 11.48 | | | 2012 | 28.69 | Canada | 0.82 |
| Chemicals, Petroleum, Rubber & Plastic | 8.20 | | | 2013 | 18.03 | Denmark | 1.64 |
| Communications | 4.92 | | | 2014 | 1.64 | Estonia | 0.82 |
| Computer Hardware | 1.64 | | | 2015 | 1.64 | Finland | 1.64 |
| Computer Software | 0.82 | | | 2016 | 2.46 | France | 4.92 |
| Construction | 1.64 | | | 2017 | 3.28 | Germany | 5.74 |
| Food & Tobacco Manufacturing | 6.56 | | | 2018 | 4.92 | Greece | 0.82 |
| Industrial, Electric & Electronic Machinery | 12.30 | | | 2019 | 4.92 | Ireland | 0.82 |
| Media & Broadcasting | 2.46 | | | 2020 | 0.82 | Israel | 2.46 |
| Metals & Metal Products | 0.82 | | | | | Italy | 2.46 |
| Mining & Extraction | 1.64 | | | | | Luxembourg | 0.82 |
| Miscellaneous Manufacturing | 0.82 | | | | | Netherlands | 2.46 |
| Printing & Publishing | 2.46 | | | | | Norway | 2.46 |
| Property Services | 4.10 | | | | | Sweden | 11.48 |
| Public Administration, Education, Health | 1.64 | | | | | UK | 6.56 |
| Retail | 4.92 | | | | | USA | 47.54 |
| Textiles & Clothing Manufacturing | 2.46 | | | | | | |
| Transport, Freight & Storage | 5.74 | | | | | | |
| travel, Personal & Leisure | 3.28 | | | | | | |
| Utilities | 4.10 | | | | | | |
| Wholesale | 3.28 | | | | | | |
| Wood, Furniture & Paper Manufacturing | 7.38 | | | | | | |

## APPENDIX B

| Regression Statistics | |
|---|---|
| Multiple R | 0.13258349 |
| R Square | 0.01757838 |
| Adjusted R Square | 0.00864728 |
| Standard Error | 0.03564917 |
| Observations | 112 |

ANOVA

| | df | SS | MS | F | Significance F |
|---|---|---|---|---|---|
| Regression | 1 | 0.00250134 | 0.002501338 | 1.96822 | 0.1634532 |
| Residual | 110 | 0.13979495 | 0.001270863 | | |
| Total | 111 | 0.14229629 | | | |

| | Coefficients | Standard Error | t Stat | P-value | Lower 95% | Upper 95% |
|---|---|---|---|---|---|---|
| Intercept | 0.00352868 | 0.00369222 | 0.955707937 | 0.34131545 | -0.0037884 | 0.0108458 |
| Revenue growth | -0.035984 | 0.02564913 | -1.40293264 | 0.1634532 | -0.0868146 | 0.01484655 |