Marital Status of Executives and Company Performance

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MARITAL STATUS OF EXECUTIVES AND COMPANY PERFORMANCE

by

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ABSTRACT

This research paper explores differences in company performance levels, as measured by selected company fundamentals and annual return, with regard to the marital status of top executives, specifically the chief executive officer and the chief financial officer. It examines whether the differences in firm performance are determined by the marital status of the respective business executive. Groups of never married, married, and divorced executives are compared against each other to establish if and how the company performance changes between these groups. Summary statistics of the examined variables in conjunction with the results of the simple and multiple regression analyses indicate that marriage clearly has a detrimental effect on a firm's performance. By contrast, divorce is beneficial as it contributes to improved firm performance.

As previous research has revealed, professional performance of top executives, particularly CEOs, as well as money managers is influenced by distractions originating in their personal life events. Because human attention is naturally limited, major life events, such as marriage or divorce, can have detrimental effects on the professional performance of a business executive, and therefore also on the firm performance. Consistent with the results of previous research, the data analysis identifies marital status of CEOs and CFOs as a significant determinant of firm performance.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

1. INTRODUCTION

"This divorce is extraordinary simply because of the enormous amounts of money involved," said Charlie Hodges, a Dallas family lawyer who specializes in representing wealthy business executives and professional athletes in divorce cases. "The question is, will Mrs. Hamm come out of this trial filthy rich or filthy, filthy, filthy rich."

– dallasnews.com, September 2014

"On Tuesday Joly disclosed in a filing that he sold 451,153 shares of the company for a total of $16.7 million. He paid $6.3 million to exercise stock options, so he netted just over $10 million through the sale. The company issued a statement saying the sale was prompted by his need to pay a divorce settlement.… But shares have tripled in value so far this year as Joly cut costs and improved earnings, making Best Buy one of the top performers on the S&P 500 index."

– money.cnn.com, September 2013

Behavioral finance perspective aims to explain how investors behave in the market as well as how markets behave in practice. On the contrary, the traditional approach takes into consideration how investors and markets should behave in theory. Traditional finance perspective based on neoclassical economics assumes that investors are always rational, risk-averse, and self-interested. It further assumes that investors have access to perfect information which they process without bias to maximize utility subject to budget constraints (Pompian, 2012). Behavioral finance approach analyzes observed financial behavior and considers mental processes that may cause investors to act differently than the traditional perspective expects. As Pompian (2012) comments, behavioral researchers found out that the approaches and outcomes

of traditional finance do not align with how investors make decisions in practice and what outcomes these decisions result in. Pompian summarizes that decision-making processes and the outcomes of these processes may be perceived as irrational or suboptimal from the traditional finance point of view. Simon (1967) termed this phenomenon as the *principle of bounded rationality*. Educated by behavioral research findings, the investment community began to understand that it is not possible to rely only on hard science to predict how investors and markets are going to behave.

Generally speaking, behavioral finance attempts to understand the process of decision-making on both the individual and collective level. It utilizes fundamental psychological concepts in order to explain why investors and markets behave the way they do. Behavioral finance does not assume that people behave rationally and it does not assume that markets are efficient. Individual behaviors and biases that affect investors' behavior are considered and compared to the ideal model of a rational player. Similarly, market anomalies are examined and compared to efficient markets as described by the traditional finance perspective.
The assumptions of market efficiency and rational behavior of investors are ultimately challenged.

The concept of bounded rationality introduced by Simon (1967) explains that people do not make completely rational decisions because they do not have the mental capacity to solve problems in an objectively rational manner. Simon claims that the problems one must work out are often too complex. Thus, simplified models of situations are constructed to solve problems of the real world as objectively rational behavior is unattainable. When people are making decisions, they choose to satisfice as opposed to optimize. Human beings are naturally limited

and therefore are not able to make fully informed rational decisions. The term *satisfice* means that once a person finds a satisfactory decision based on the analysis of the information that is available, he or she will halt research. The subsequent decision the person makes is not necessarily the optimal decision but the decision maker is satisfied with this decision according to his or her specific criteria and limited objectives. Therefore, the final decision is adequate from the decision maker's perspective because the goal is satisfied at a previously specified level. Pompian (2012) explains that decision makers choose to satisfice because they want to save time and money that would have otherwise been allocated towards finding the optimal solution.

As research has proven on many occasions, the private life of a top executive or a money manager who is exposed to a high level of pressure not only at work but also outside of the professional environment can have a significant effect on his or her own professional performance. The executive's performance is subsequently reflected on the overall company performance, which is regularly measured and compared against the company's past performance and the industry benchmarks. Since performance measures and fundamentals for the listed companies are easy to acquire, an amazing opportunity exists to examine a potential relationship between personal events of top executives, i.e., CEOs and CFOs, and their company performance.

The research paper explores the main principles of behavioral finance and attempts to find out whether a company performance is linked to the marital status of its top executive. Further, the paper examines whether and how different marital statuses affect company performance as measured by selected company fundamentals and annual return. One of the

indicators of a relationship between a marital status of an executive and the firm performance is a change in return on assets and return on equity across marital statuses. Do operating and net income increase when the boss is married and do these fundamentals drop when the boss is divorced? Do never married business executives apply aggressive sales strategies to generate more revenue in comparison to married or divorced officers? The analysis aims to find out whether a statistically significant relationship exists between the marital status of a top executive, i.e., a CEO or a CFO, and the company performance as evaluated by selected company fundamentals and its annual return.

2. LITERATURE REVIEW

Researchers have been trying to prove whether the level of productivity is directly related to one's marital status. According to Becker (1973), the division of labor that is possible in marriage causes the overall productivity to increase. Although it is common in households that partners split their responsibilities, it is important to keep in mind that such division of labor can significantly increase each partner's productivity level, be it at home or at work. In other words, it means that while one of the partners takes care of certain tasks such as shopping, cooking, doing the laundry, and/or taking care of children, the other one can fully concentrate on his or her professional performance which leads to an increased level of productivity (Lu, Ray, and Teo, 2016). Korenman and Neumark (1991) substantiate this claim by their research which has shown that married male professionals tend to hold higher paying jobs in comparison to male professionals who are not married, and they also receive higher performance ratings. Cornaglia and Feldman (2011) conducted research involving a sample of professional baseball players and found that married players earn up to 16 percent more than unmarried players, but they observed that the results hold only for players in the top third of the ability distribution. Cornaglia and Feldman stated that they did not find any clear differences in productivity between married and non-married baseball players. Bellas and Toutkoushian (1999) examined the relationship between faculty research productivity and their individual characteristics, specifically gender, race/ethnicity, and family status. Consistent with Becker's (1973) view on marriage and its contribution to productivity, Bellas and Toutkoushian (1999) concluded that the research output produced by married faculty is higher than the research output produced by unmarried faculty.

Larcker, McCall, and Tayan (2013), on the other hand, state that a CEO's divorce may have a significant negative impact on his or her company performance and therefore also on its shareholders. The authors suggest that shareholders pay attention to what goes on in personal lives of CEOs and take this information into account when making investment decisions (2013). First, CEOs may lose control or influence. If a CEO owns a significant portion of the company and suddenly needs money for the divorce settlement, the CEO may be forced to sell the shares to have liquid funds available. Thus, the influence of such a CEO will decrease, which may result in the adoption of a different, perhaps less favorable approach towards corporate strategy, financial management, and corporate governance. Second, as Larcker, McCall, and Tayan (2013) explain, divorce can influence the productivity, concentration, and energy levels of the boss. As human beings, we are naturally susceptible to the negative effects of emotional distress. Therefore, when CEOs go through personal challenges, divorce being one of the major events, their attention will automatically be limited. Speaking to the literature on marriage and productivity, researchers Lu, Ray, and Teo claim that within the realm of investment management "marriage can be disruptive to productivity because the event distracts fund managers from their investment activities" (2016). Third, Larcker, McCall, and Tayan (2013) introduce another possible effect of a CEO's divorce on the company performance defined as the CEO's changed attitude towards risk. For example, if a CEO loses a significant portion of equity in the company due to divorce, the result may be much riskier investment decisions on behalf of the company driven by the intention to offset personal loss of wealth. On the other hand, as the authors clearly explain, if a CEO satisfies the settlement by giving up other personal assets but keeps the equity in a corporation, then the boss may become more risk-averse. Consequently, the

executive may give up promising investment opportunities in order to protect the current value of the company. Such decisions will cause the stock price to become less volatile. However, potential returns to shareholders are also going to be lower because of less risk being undertaken (Larcker, McCall, & Tayan, 2013).

In his study of the effects of marital status and children on savings and asset allocation decisions, Love (2010) explains that divorced men take on more risk by increasing their investment in stocks. Women, on the contrary, tend to become more risk-averse following a divorce. Love finds that these adjustments result from family shocks, such as sudden changes in resources and expectations, which come as a consequence of a change in marital status and family composition. Relevant to the issue of risk-taking is also a study conducted by researchers Roussanov and Savor (2013) in which the authors show that companies run by single CEOs are characterized by higher levels of stock return volatility and more aggressive investment policies in comparison to similar companies whose CEOs are married. Such findings are consistent with the results presented by Dr. Lu, Ray, and Teo (2016), who conclude that single hedge fund managers take on more risk than married fund managers. Roussanov and Savor (2013) explain that single individuals are expected to compete for partners in the future. Therefore, the more risk they take, the higher are their chances to rank above their competitors, and the more likely it is that they will find a higher quality mate. Moreover, Roussanov and Savor show that the competition is particularly intense within the group of the wealthiest individuals into which CEOs belong.

3. DATA COLLECTION

The data analysis is based on manual collection of marital events of CEOs and CFOs of the top 1500 companies from January 1992 through December 2012 as well as their company performance measures, i.e., selected company fundamentals and annual return. The purpose of the analysis is to find out whether and how marital status of a top executive affects the company performance. The data collection consisted of two parts. First, marriage and divorce records for company top executives, i.e., CEOs and CFOs, were manually collected. For this part of the data collection, the LexisNexis Company database of public records as well as the Internet were employed. Fifteen states in which these records are publicly disclosed were searched in order to gather the respective marital records. The 15 states are as follows: Arizona, California, Colorado, Connecticut, Florida, Georgia, Kentucky, North Carolina, Nevada, Ohio, Pennsylvania, Rhode Island, Texas, Utah, and Virginia. The marriage and divorce records from the remaining states are not publicly accessible.

The first step was to perform a name search in the LexisNexis database. The first names, middle initials, and the last names were searched. If the search resulted in multiple exact matches, other publicly accessible Internet sources were utilized to find the names of possible spouses, and then LexisNexis was used again to determine the correct record of marriage or divorce. To ensure that a correct match was identified, the place of marriage was compared with the physical location of the company which the examined executive runs.

If the name is very common and the name search returned numerous records, for example more than 30, the name was deleted from the sample because there is not a way to find out which person is the searched executive. However, if the name is unique and no marital records were

found, it means that the CEO or CFO has never been married. If a marriage record exists but no divorce record was found, then it means that the examined person is still married. If a marriage and a divorce record were found, then the executive is divorced. In case two marriage records and one divorce record exist, the person is married for the second time. Two marriage records and two divorce records per executive indicate that the executive has been married twice and divorced twice. The search yielded 616 marriages and 190 divorces for 607 top executives, i.e., CEOs and CFOs. No marriage and no divorce records for the examined CEOs and CFOs were found in the state of Utah. The distribution of marriages and divorces sorted by state is presented in Table 1. The divorce rates for each state are also reported.

The second part of the data collection entailed gathering performance measures that served as dependent variables for the regression analysis. The Wharton Research Data Services (WRDS) provided by the University of Pennsylvania were employed in order to access the Compustat database as well as the CRSP (Center for Research in Security Prices) database for the region of North America. Using the company identifier, i.e., GVKEY for Compustat and CUSIP for CRSP, annual company fundamentals and annual return were gathered. This data was used to evaluate company performance and to determine whether the performance is directly affected by the marital status of a company top executive, i.e., a CEO or a CFO.

4. METHODOLOGY

In this section, the dependent and independent variables that were used to obtain the summary statistics and the results of regression analyses are introduced. The empirical methods that were used for the data analysis are explained.

4.1. Definition of Variables

4.1.1. Dependent variables

The dependent variables that were examined represent the company performance measures, i.e., company fundamentals and annual return. The dependent variables that were used to determine the effect of marital status of a top executive on the company performance are listed as follows:

- *Return on assets (ROA)*

The ratio is calculated as net income divided by average total assets. It represents an indicator of profitability, i.e., how effectively management uses company assets to generate income. In other words, ROA measures the company's return on investment in itself.

- *Return on equity (ROE)*

The ratio is calculated as net income over average total equity. It indicates how profitable a company is and whether management uses shareholders' money effectively to generate profit.

- *Annual return*

This percentage value represents an average increase or decrease in company stock price over a period of 12 months. It shows how the investment has performed over time.

- *Net profit margin*

The ratio measures profitability and is calculated as net income divided by total revenue. It indicates how much the company earns in net income per one dollar in revenue.

- *Operating income*

Operating income is also called operating profit or earnings before interest and taxes and it is calculated as revenue minus expenses. It reveals the company's ability to generate profit from operations.

- *Net income*

It is calculated as revenue minus cost of goods sold and depreciation (where applicable), operating expenses, interest expense, and income tax expense. It indicates how profitable a company has been over a specific period and it is also used to determine earnings per share (EPS).

- *Retained earnings*

Retained earnings represent the amount of net earnings that the company retained, i.e., that has not been distributed to company shareholders in the form of dividends. Retained earnings is a component of stockholders' equity.

- *Total revenue*

It is calculated as the sum of price per good or service multiplied by the respective quantity sold; discounts and returns are also accounted for. Total revenue represents the amount of money that the company has generated over a period of time by selling goods and/or services.

- *Employees*

This item represents the actual number of people employed by the company and its consolidated subsidiaries.

4.1.2. Independent variables

The key independent variable in the analysis represents the marital status of top executives, i.e., CEOs and CFOs. Dummy variables were used to denote the qualitative aspect of the key independent variable and other control variables. The marital status records were sorted in two ways. *Simple sort* assigns business executives, i.e., CEOs and CFOs, into three different categories based on their current marital status. This approach provides the following categories: 'never married', 'married', and 'divorced'. *Complex sort* assigns these executives into five different categories based on their current marital status as well as the number of times they have been married or divorced. This approach provides the following categories: 'never married', 'married once and still married', 'married once and divorced', 'married more than once and still married', and 'married more than once and divorced.'

Control variables were used for the purpose of testing the relationship between the dependent variable and the independent variables. These variables, which must be held constant, are represented by the company-level control variables. The control independent variables that were used in the analysis are as follows: total assets, the age of the executive, the job title held by the executive indicating whether he or she is a CEO or a CFO, and SIC (Standard Industrial Classification) code dummy variables which account for industry fixed effects.

4.2. Empirical Methods

In order to obtain relevant empirical results, the following analyses of the collected data were performed.

4.2.1. Descriptive Statistics

Descriptive statistics are used to summarize different characteristics of the examined data and quantify the information the data contains. The mean and median are measures of the average of a data set and its central tendency. The mean is the arithmetic average of a data set calculated as the sum of the data divided by the number of observations in the set. It can be highly sensitive to outliers. Because the original data set contained extreme outliers, the data had to be winsorized to reduce the effect of these extreme values. The median is the middle value sorted according to size. This means that an equal number of values lies above and below the median. The median is a resistant measure because it is not strongly affected by outliers. Therefore, it is a much better measure of the average for a data set that contains outliers.

The minimum and maximum values indicate the range of a data set, which is a measure of dispersion. It provides information about how much the data in the set varies from its average. Due to winsorization, the reported minimum and maximum values are often identical. The interquartile range, defined as the difference between the 75^{th} and 25^{th} percentile, is not subject to the influence of outliers. It measures the range of the middle 50% of the data. The standard deviation is a measure of variability and it is calculated as the square root of the mean sum of squared differences from the mean. It measures the amount by which each observation differs from the mean. In other words, it represents the numerical difference from the mean. When the size of the standard deviation is close to the size of the mean, it indicates a large variability in the

data set. Because of its complex arithmetic relationship to the mean, the standard deviation is highly sensitive to outliers.

4.2.1.1. Distribution of Marital Events for Business Executives by State

Based on the data collection as described in section 3 of this paper, 616 marriages and 190 divorces for 607 top executives, i.e., CEOs and CFOs, were identified. The analyzed sample contains records from 15 states where marriage and divorce records are publicly available. Table 1 reports the distribution of marital events, i.e., marriages and divorces, as well as the divorce to marriage ratios, by state. Figure 1 graphically illustrates the distribution of marital events for CEOs and CFOs by state.

4.2.1.2. Summary Statistics of Company Fundamentals and Annual Return

Table 2 reports the summary statistics of company fundamentals, i.e., return on assets, return on equity, net profit margin, operating income, net income, retained earnings, total revenue, and total number of employees (Employees), and annual return based on the analysis of the full sample of observations (Panel A). Reported are the number of observations (N), mean, median, standard deviation (SD), 25^{th} percentile (Q_1), 75^{th} percentile (Q_2), and minimum (Min) and maximum (Max) values. N, i.e., the number of records per company characteristic, varies because some values in the analyzed sample were missing. Return on assets, return on equity, annual return, and net profit margin are reported as percentages. Earnings before interest and taxes, net income, retained earnings, and total revenue are reported in millions of dollars. The total number of employees is reported in thousands.

4.2.1.3. Summary Statistics of Company Fundamentals and Annual Return Sorted by Marital Status of Executives

Marital status of the examined CEOs and CFOs was defined in two ways. Table 3 explains that simple sort is defined by status 1 and complex sort is defined by status 2. *Status 1* assigns a value of 0 to executives who have never been married, i.e., have no marital records within the 15 states for the sample period; a value of 1 to executives who have been married once or more than once and are still married, i.e., for whom only one marriage record was found or two marriage records and one divorce record were found; and a value of 2 to executives who have been divorced once or more than once and are divorced, i.e., for whom an equal number of marriage and divorce records was found within the 15 states for the sample period. Table 4 reports the summary statistics of company fundamentals and annual return sorted by status 1 (Panel B).

Status 2 assigns a value of 0 to executives who have never been married, i.e., have no marital records within the 15 states for the sample period; a value of 1 to executives who have been married once and are still married, i.e., for whom only one marriage record was found; a value of 2 to executives who have been married once and are divorced, i.e., for whom one marriage and one divorce record were found; a value of 3 to executives who have been married more than once and are still married, i.e., for whom two marriage records and one divorce record were found; and a value of 4 to executives who have been married more than once and are divorced, i.e., for whom an equal number of marriage and divorce records was found within the 15 states for the sample period. Table 5 reports the summary statistics of company fundamentals and annual return sorted by status 2 (Panel C).

4.2.2. Regression Analysis

Regression analysis is a statistical method used to identify and analyze existing relationships among bivariate and multivariate data. It allows for predictions on a variable that are based on the available data for related variables. It measures the sensitivity of a variable to changes in related variables. The independent variables in a regression equation are called explanatory variables (predictors) because they serve to predict and explain the dependent variables. Regression equation is an equation that summarizes the relationship between a dependent variable and one or more independent (explanatory) variables.

The key independent variables whose effect on the selected dependent variables was analyzed are derived from the simple sort as defined by status 1 as explained in Table 3. Dummy variables were used to determine how different marital statuses of CEOs and CFOs affect the company performance and to find out how the levels of performance of these companies vary when groups of executives with differing marital statuses are compared against each other. The key independent variables and the respective dummy variables used for both the simple and multiple regressions are as follows:

The independent variable ‘status 1’ takes a value of 0, 1, and 2 as explained in Table 3. It is used to test whether a linear relationship between variables exists. The independent variable ‘married’ takes a value of 1 when an executive is married and 0 when he or she has never been married. It explains if and how the company performance changes when groups of never married and married executives are compared and whether the relationship between the dependent and independent variable is significant. The explanatory variable ‘divorced’ takes a value of 1 when an executive is divorced and 0 when he or she has never been married. It explains if and how the

company performance changes when groups of never married and divorced executives are compared and whether the relationship between the dependent and independent variables is significant. The key independent variable 'divorced 2' takes a value of 1 when an executive is divorced and 0 when he or she is married. As in previous cases, this variable explains if and how the company performance changes when groups of married and divorced executives are compared and whether the relationship between the dependent and independent variable is significant. The last independent variable 'ever married' takes a value of 1 when an executive is married or divorced and a value of 0 when he or she has never been married. It is used to determine if and how the company performance changes when a group of married and divorced executives pooled together is compared against a group of never married executives and whether the relationship between the dependent and independent variable is significant.

The coefficient of determination, R^2 (R-squared), provides information regarding how well a regression equation fits the data. It is based on the ratio of SS_E / SS_T where SS_E is the sum of squared errors and SS_T is the total sum of squares. This ratio accounts for the part of total variability that is not explained by the regression. Therefore, R^2 represents the part of total variability that is explained by the regression because $R^2 = (1 - SS_E / SS_T)$.

4.2.2.1. Simple Regression Analysis

Simple regression involves only one independent variable which is the key independent variable defined by the marital status of the group of examined business executives. The regression is based on a linear equation

$$Y = a + bX,$$

where Y represents the dependent variable, which is the company performance measure, i.e., company characteristic or annual return, and X represents the key independent variable analyzed, which is the marital status of executives as defined above. A specific example of a simple regression equation is:

$$\text{Return on assets} = \alpha + \beta \times \text{‘married’ dummy variable}$$

Table 6 reports the results of the simple regression analysis of company fundamentals and annual return based on the marital status of business executives, i.e., CEOs and CFOs.

4.2.2.2. Multiple Regression Analysis

Multiple regression involves other control variables besides the key independent variable, i.e., it must involve at least two explanatory variables. It is important to include other independent variables to obtain an improved fit of the regression equation. The regression is based on a linear equation

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + \ldots + b_iX_i,$$

where Y represents the dependent variable, which is the company performance measure, i.e., company characteristic or annual return; X_1 represents the key independent variable analyzed, which is the marital status of executives as defined above, and X_2, X_3,…, X_i are the other company-level control variables employed, i.e. total assets, the age of executives, the position held by the executives (CEO or CFO) defined as ‘if CEO’, and the SIC (Standard Industrial Classification) code dummy variables. The independent variable ‘if CEO’ takes a value of 0 when the executive is a CFO and a value of 1 when the executive is a CEO.

A specific example of a multiple regression equation is as follows:

$$\text{Net income} = \alpha + \beta_1 \times \text{‘divorced’ dummy} + \beta_2 \times \text{total assets} + \beta_3 \times \text{age}$$

$$+ \beta_4 \times \text{‘if CEO’ dummy variable} + \beta_5 \times \text{‘SIC’ dummy variable}$$

Table 7 reports the results of the multiple regression analysis of company fundamentals and annual return based on the marital status of business executives, i.e., CEOs and CFOs.

5. EMPIRICAL RESULTS

5.1. Distribution of Marital Events for Business Executives

As the results recorded in Table 1 show, the highest number of marriages, i.e., 238 and 177, is reported in California and Texas, respectively. On the other hand, the highest number of divorces is reported in Texas and Florida, i.e., 84 and 26, respectively, although only 44 relevant marriage records were found in the state of Florida. No marriage and no divorce records for the examined executives were found in the state of Utah. No divorce records but only one marriage record was found in Pennsylvania while no divorce records and 25 marriage records were found in Colorado. Therefore, the divorce rate for the CEOs and/or CFOs living in these two states is equal to zero. An equal number of marriage and divorce records were found in the state of Nevada, Rhode Island, and Virginia which means that the divorce rate for these three states is equal to 1. California, with the highest number of marriage records of top executives reported at 238 and only 14 divorce records found, has a very low divorce rate, specifically a rate of 0.06. This result may be affected by limited ability to identify and collect all relevant records as explained in section 3 of the paper.

Consistent with the findings by Dr. Lu, Ray, and Teo (2016) in their research paper on the impact of limited attention of hedge fund managers exposed to marital events, the overall ratio of divorces to marriages is lower than the divorce to marriage ratio of the general public in the United States (two marriages per one divorce). This finding can be explained by lower divorce rates for college-educated individuals as documented by Isen and Stevenson (2010) in their study on trends in marriage, divorce, and fertility. Figure 1 shows the graphical distribution of marital events, i.e., marriages and divorces, by state.

Table 1
Distribution of marital events for business executives

This table reports the distribution of marital events, i.e., marriages and divorces, for business executives, i.e., CEOs and CFOs, by state. Divorce rate represents the ratio of the number of divorces to the number of marriages per state. The sample includes records from 15 states. The sample period ranges from January 1992 to December 2012.

State	Marriage		Divorce		Total		Divorce rate
	Number	*Percentage*	*Number*	*Percentage*	*Number*	*Percentage*	
Arizona	8	1.30	5	2.63	13	1.61	0.63
California	238	38.64	14	7.37	252	31.27	0.06
Colorado	25	4.06	0	0.00	25	3.10	0.00
Connecticut	40	6.49	11	5.79	51	6.33	0.28
Florida	44	7.14	26	13.68	70	8.68	0.59
Georgia	31	5.03	11	5.79	42	5.21	0.35
Kentucky	11	1.79	3	1.58	14	1.74	0.27
North Carolina	11	1.79	9	4.74	20	2.48	0.82
Nevada	11	1.79	11	5.79	22	2.73	1.00
Ohio	16	2.60	13	6.84	29	3.60	0.81
Pennsylvania	1	0.16	0	0.00	1	0.12	0.00
Rhode Island	2	0.32	2	1.05	4	0.50	1.00
Texas	177	28.73	84	44.21	261	32.38	0.47
Utah	0	0.00	0	0.00	0	0.00	n/a
Virginia	1	0.16	1	0.53	2	0.25	1.00
Total	616	100	190	100	806	100	0.31

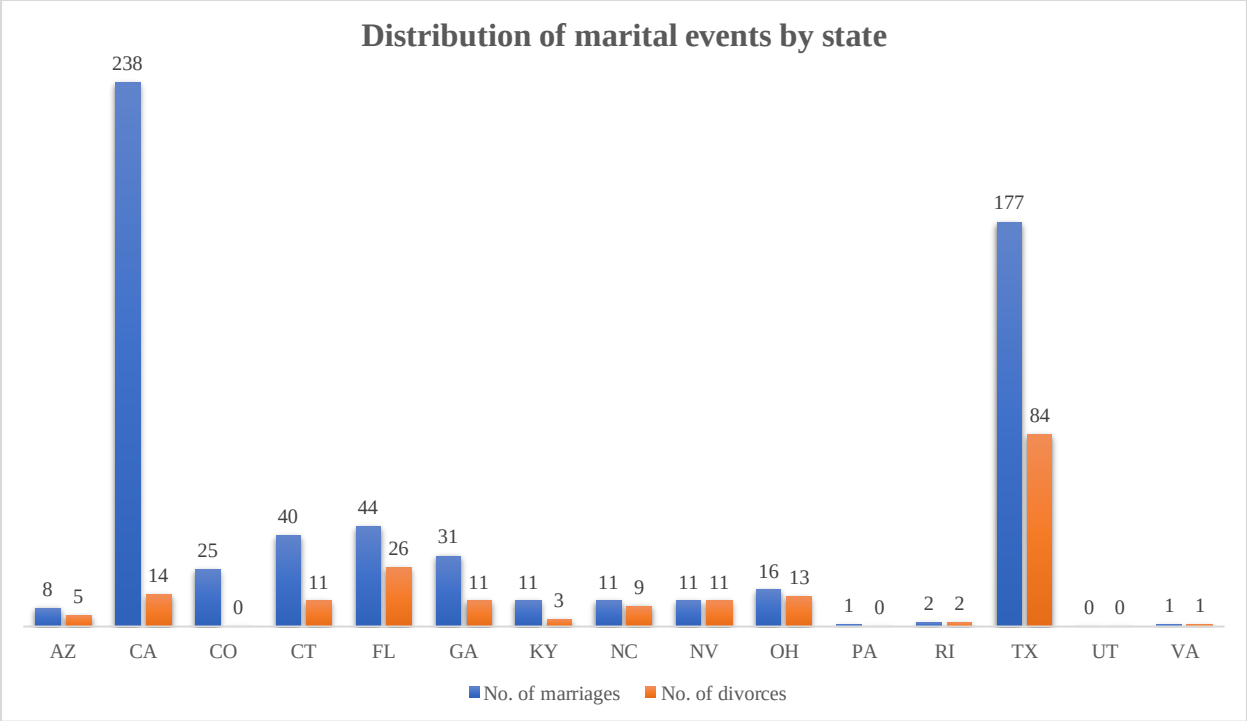

Figure 1: Distribution of marital events for business executives
This graph shows the distribution of marital events, i.e., marriages and divorces, for business executives, i.e., CEOs and CFOs, grouped by state.

5.2. Summary Statistics of Company Fundamentals and Annual Return

The summary statistics of the analyzed company fundamentals and annual return are presented in Tables 2, 4, and 5 which show the results for the full sample of observations (Panel A), simple sort defined by status1 (Panel B), and complex sort defined by status 2 (Panel C), respectively. The description of status 1 and status 2 as well as the corresponding numerical representation is documented in Table 3.

The data reported in Table 2, specifically the minimum and maximum values, indicates that the entire sample is strongly affected by outliers even though the data set was winsorized prior to the analysis. That is also why in all instances the size of the standard deviation exceeds the size of the mean which indicates that the data set is subject to a large variability. In case of

annual return, operating income, net income, retained earnings, total revenue, and number of employees, the mean is greater than the median which indicates that the distributions are skewed right. In case of ROA, ROE, and net profit margin, the mean is smaller than the median which indicates that the distributions are skewed left. Because of the presence of outliers within the data set, the median, as a resistant measure, is a better measure of the average for variables that have the mean significantly different from the median.

Table 2
Summary statistics of company fundamentals and annual return: Panel A
Full sample

This table reports the summary statistics of company fundamentals, i.e., return on assets, return on equity, net profit margin, operating income, net income, retained earnings, total revenue, and total number of employees (Employees), and annual return based on the analysis of the full sample of observations. Reported are the number of observations (N), mean, median, standard deviation (SD), 25th percentile (Q_1), 75th percentile (Q_3), and minimum (Min) and maximum (Max) values. N, i.e., the number of records per company characteristic, varies because some values in the analyzed sample were missing. Return on assets, return on equity, annual return, and net profit margin are reported as percentages. Operating income, net income, retained earnings, and total revenue are reported in millions of dollars. The total number of employees is reported in thousands. The sample period ranges from January 1992 to December 2012.

Summary statistics of company fundamentals and annual return								
Panel A: Full sample								
Variable	*N*	*Mean*	*Median*	*SD*	Q_1	Q_3	*Min*	*Max*
Return on assets	10218	3.53%	5.00%	11.72%	1.57%	8.85%	-59.17%	28.46%
Return on equity	10218	7.12%	11.24%	40.43%	4.03%	17.84%	-230.56%	171.18%
Annual return	10036	11.54%	4.12%	55.06%	-21.22%	30.74%	-79.42%	272.31%
Net profit margin	10210	2.91%	4.97%	17.20%	1.41%	9.27%	-106.26%	32.35%
Operating income	10198	470.28	91.89	1339.46	26.75	312.40	-250.48	10066.00
Net income	10218	235.59	42.75	845.10	8.25	157.22	-1006.00	6310.00
Retained earnings	10184	1059.60	181.27	3710.53	26.07	696.95	-3557.39	27997.00
Total revenue	10218	4281.26	1040.64	10590.65	388.92	3207.00	26.07	77349.00
Employees	10151	16.60	4.77	34.43	1.47	15.00	0.12	220.09

Simple sort means that business executives, i.e., CEOs and CFOs, are sorted by their current marital status, i.e., never married, married, and divorced. Therefore, *status 1* assigns a value of 0 to executives who have never been married, i.e., have no marital records within the 15 states for the sample period; a value of 1 to executives who have been married once or more than once and are still married, i.e., for whom only one marriage record was found or two marriage records and one divorce record were found; and a value of 2 to executives who have been divorced once or more than once and are divorced, i.e., for whom an equal number of marriage and divorce records was found within the 15 states for the sample period.

Complex sort means that business executives, i.e., CEOs and CFOs, are sorted by their current marital status as well as the number of times they have been married or divorced, i.e., never married, married once and still married, married once and divorced, married more than once and still married, and married more than once and divorced. Consequently, *status 2* assigns a value of 0 to executives who have never been married, i.e., have no marital records within the 15 states for the sample period; a value of 1 to executives who have been married once and are still married, i.e., for whom only one marriage record was found; a value of 2 to executives who have been married once and are divorced, i.e., for whom one marriage and one divorce record were found; a value of 3 to executives who have been married more than once and are still married, i.e., for whom two marriage records and one divorce record were found; and a value of 4 to executives who have been married more than once and are divorced, i.e., for whom an equal number of marriage and divorce records was found within the 15 states for the sample period.

Table 3
Explanation of sort by marital status and number of marital events per executive
This table shows how business executives are sorted based on their current marital status according to the simple sort and complex sort.

Status 1	Simple sort
0	Never married
1	Married
2	Divorced
Status 2	**Complex sort**
0	Never married
1	Married once, married
2	Married once, divorced
3	Married more than once, married
4	Married more than once, divorced

Panel B in Table 4 shows that the largest number of observations (close to 7,400) per variable comes from companies that have a CEO or a CFO who has never been married. About 2100 observations come from companies whose examined executive is married, and about 720 observations come from companies whose chief executive is divorced. The median values for ROA, ROE, annual return, and net profit margin are close across the three marital statuses. However, the highest median ROA and net profit margin are reported for 'never married,' the highest median ROE is reported for 'divorced,' and the highest median annual return is reported for 'married.' On the contrary, the lowest median ROA, ROE, and net profit margin are reported for 'married,' whereas the lowest median annual return is reported for 'never married.' Next, the highest median operating income, net income, retained earnings, total revenue, and number of employees are reported for category 'divorced' while the lowest median values for these five variables are reported for category 'married.' Respective graphs are presented in Appendix A.

Consistent with the analysis of the median values is also the analysis of the mean values of the selected variables. The summary statistics reported in Panel B indicate that marriage has a negative effect on company performance, whereas divorce proves beneficial in the form of an increase in company performance measures.

Table 4
Summary statistics of company fundamentals and annual return: Panel B
Sorted by status 1

This table reports company fundamentals, i.e., return on assets, return on equity, net profit margin, operating income, net income, retained earnings, total revenue, and total number of employees (Employees), and annual return grouped by marital status of business executives, i.e., CEOs and CFOs. The analysis was performed based on the simple sort defined by status 1 which is explained in Table 3.
Reported are the number of observations (N), mean, median, standard deviation (SD), 25th percentile (Q_1), 75th percentile (Q_3), and minimum (Min) and maximum (Max) values. N, i.e., the number of records per company characteristic sorted by status 1, varies because some values in the analyzed sample were missing. Return on assets, return on equity, annual return, and net profit margin are reported as percentages. Operating income, net income, retained earnings, and total revenue are reported in millions of dollars. The total number of employees is reported in thousands. Minimum and maximum values are identical across the simple sort due to winsorization. The sample period ranges from January 1992 to December 2012.

Summary statistics of company fundamentals and annual return									
Panel B: Sorted by status 1									
Variable	*Status*	*N*	*Mean*	*Median*	*SD*	Q_1	Q_3	*Min*	*Max*
Return on assets	0	7390	3.66%	5.07%	11.55%	1.63%	8.82%	-59.17%	28.46%
	1	2104	2.98%	4.73%	12.90%	1.09%	9.11%	-59.17%	28.46%
	2	724	3.85%	5.02%	9.64%	2.10%	8.38%	-59.17%	28.46%
Return on equity	0	7390	7.65%	11.37%	40.77%	4.19%	17.94%	-230.56%	171.18%
	1	2104	4.96%	10.65%	40.83%	3.06%	17.61%	-230.56%	171.18%
	2	724	7.90%	11.61%	35.36%	5.64%	17.49%	-230.56%	171.18%
Annual return	0	7253	11.05%	3.76%	53.76%	-20.81%	30.30%	-79.42%	272.31%
	1	2066	12.71%	5.24%	59.60%	-23.69%	32.30%	-79.42%	272.31%
	2	717	13.16%	5.05%	54.38%	-18.88%	31.54%	-79.42%	272.31%
Net profit margin	0	7389	3.04%	5.01%	16.72%	1.47%	9.11%	-106.26%	32.35%
	1	2103	2.08%	4.86%	19.02%	1.13%	9.70%	-106.26%	32.35%
	2	718	3.95%	4.96%	16.40%	1.62%	9.07%	-106.26%	32.35%
Operating income	0	7374	480.85	100.25	1335.49	29.01	328.40	-250.48	10066.00
	1	2100	387.16	64.00	1182.87	18.30	223.31	-250.48	10066.00
	2	724	603.64	121.43	1736.36	39.29	394.34	-250.48	10066.00
Net income	0	7390	242.99	46.97	852.46	8.76	166.51	-1006.00	6310.00
	1	2104	179.45	29.21	723.57	4.79	112.69	-1006.00	6310.00
	2	724	323.15	55.78	1060.95	13.96	202.33	-1006.00	6310.00
Retained earnings	0	7364	1106.29	200.62	3726.32	32.46	759.65	-3557.39	27997.00
	1	2096	781.14	114.63	3356.40	5.74	490.78	-3557.39	27997.00
	2	724	1390.85	209.78	4416.47	37.90	837.78	-1364.17	27997.00
Total revenue	0	7390	4381.37	1152.58	10418.21	425.83	3364.43	26.07	77349.00
	1	2104	3290.59	768.21	8841.56	279.17	2213.45	26.07	77349.00
	2	724	6138.32	1159.33	15554.69	454.72	4482.90	26.07	77349.00
Employees	0	7339	16.93	5.30	34.13	1.65	16.00	0.12	220.09
	1	2089	13.72	3.12	32.34	1.08	9.59	0.12	220.09
	2	723	21.57	5.70	41.89	1.25	20.00	0.12	220.09

Panel C in Table 5 reports the results for complex sort. These results show that the median ROA, ROE, annual return, and net profit margin are close in values across the complex sort. The highest median ROA, ROE, and net profit margin are reported for 'married more than once and divorced,' whereas the highest median annual return is reported for 'married once and married.' By contrast, the lowest median ROA is reported for 'married more than once and married,' ROE for 'married once and married,' annual return for 'never married,' and net profit margin for category 'married once and divorced.' Next, the highest median operating income, net income, retained earnings, total revenue, and number of employees are reported for category 'married more than once and divorced,' which is analogous to the outcome of Panel B analysis. The lowest median operating income, retained earnings, and total revenue are reported for executives who are 'married once and married,' while the lowest median net income and number of employees are reported for CEOs and CFOs who are 'married more than once and married.' Again, these results are consistent with the outcome of the analysis of Panel B. Respective graphs are presented in Appendix B. The summary statistics reported in Panel C support the conclusion drawn from the data in Panel B. Marriage results in decreased firm performance while divorce produces higher outcomes.

Table 5
Summary statistics of company fundamentals and annual return: Panel C
Sorted by status 2

This table reports company fundamentals, i.e., return on assets, return on equity, net profit margin, operating income, net income, retained earnings, total revenue, and total number of employees (Employees), and annual return grouped by marital status of business executives, i.e., CEOs and CFOs. The analysis was performed based on the complex sort defined by status 2 which is explained in Table 3.
Reported are the number of observations (N), mean, median, standard deviation (SD), 25th percentile (Q_1), 75th percentile (Q_3), and minimum (Min) and maximum (Max) values. N, i.e., the number of records per company characteristic sorted by status 2, varies because some values in the analyzed sample were missing. Return on assets, return on equity, annual return, and net profit margin are reported as percentages. Operating income, net income, retained earnings, and total revenue are reported in millions of dollars. The total number of employees is reported in thousands. Minimum and maximum values are identical across the complex sort due to winsorization. The sample period ranges from January 1992 to December 2012.

Summary statistics of company fundamentals and annual return									
Panel C: Sorted by status 2									
Variable	*Status*	*N*	*Mean*	*Median*	*SD*	*Q_1*	*Q_3*	*Min*	*Max*
Return on assets	0	7390	3.66%	5.07%	11.55%	1.63%	8.82%	-59.17%	28.46%
	1	1941	3.02%	4.82%	12.98%	1.02%	9.29%	-59.17%	28.46%
	2	696	3.67%	4.90%	9.73%	2.03%	8.26%	-59.17%	28.46%
	3	163	2.51%	4.27%	11.90%	1.94%	7.37%	-59.17%	20.79%
	4	28	8.38%	9.14%	5.31%	5.77%	11.40%	-4.42%	17.19%
Return on equity	0	7390	7.65%	11.37%	40.77%	4.19%	17.94%	-230.56%	171.18%
	1	1941	4.97%	10.51%	41.10%	2.67%	17.94%	-230.56%	171.18%
	2	696	7.69%	11.41%	36.02%	5.37%	17.49%	-230.56%	171.18%
	3	163	4.77%	11.82%	37.60%	5.47%	16.42%	-230.56%	171.18%
	4	28	13.16%	14.59%	7.57%	10.38%	17.98%	-5.54%	22.80%
Annual return	0	7253	11.05%	3.76%	53.76%	-20.81%	30.30%	-79.42%	272.31%
	1	1908	12.67%	5.32%	59.53%	-24.36%	32.52%	-79.42%	272.31%
	2	689	13.37%	5.06%	54.88%	-18.88%	31.17%	-79.42%	272.31%
	3	158	13.16%	4.46%	60.65%	-16.85%	28.83%	-79.42%	272.31%
	4	28	8.06%	4.08%	40.58%	-18.05%	35.39%	-73.46%	95.16%
Net profit margin	0	7389	3.04%	5.01%	16.72%	1.47%	9.11%	-106.26%	32.35%
	1	1941	2.04%	4.86%	19.21%	1.07%	9.80%	-106.26%	32.35%
	2	690	3.72%	4.71%	16.56%	1.62%	9.01%	-106.26%	32.35%
	3	162	2.58%	4.80%	16.61%	1.83%	9.26%	-106.26%	21.71%
	4	28	9.61%	7.12%	10.55%	2.74%	16.64%	-8.54%	29.88%
Operating income	0	7374	480.85	100.25	1335.49	29.01	328.40	-250.48	10066.00
	1	1937	353.82	62.98	1003.49	17.02	230.07	-250.48	10066.00
	2	696	618.13	118.37	1768.65	39.35	401.08	-250.48	10066.00
	3	163	783.38	71.01	2433.81	28.44	154.30	-45.18	10066.00
	4	28	243.35	198.74	270.95	20.39	290.17	-3.16	1045.25
Net income	0	7390	242.99	46.97	852.46	8.76	166.51	-1006.00	6310.00
	1	1941	158.00	29.22	625.80	4.41	116.80	-1006.00	6310.00
	2	696	330.92	54.24	1080.96	14.55	202.83	-1006.00	6310.00
	3	163	434.94	29.05	1426.71	9.38	95.45	-560.21	6310.00
	4	28	130.02	87.39	155.74	9.86	168.34	-75.16	573.33

Retained earnings	0	7364	1106.29	200.62	3726.32	32.46	759.65	-3557.39	27997.00
	1	1933	676.46	111.09	2876.28	5.19	481.75	-3557.39	27997.00
	2	696	1424.22	207.63	4499.72	36.96	817.51	-1364.17	27997.00
	3	163	2022.59	167.86	6733.57	23.66	523.02	-2001.86	27997.00
	4	28	561.17	337.06	613.83	58.85	917.67	10.27	2434.49
Total revenue	0	7390	4381.37	1152.58	10418.21	425.83	3364.43	26.07	77349.00
	1	1941	3030.51	756.12	7620.54	271.39	2182.35	26.07	77349.00
	2	696	6323.92	1155.81	15835.29	453.00	4616.27	26.07	77349.00
	3	163	6387.52	918.40	17575.73	365.60	2442.62	26.07	77349.00
	4	28	1524.92	1286.27	1107.17	694.95	2276.30	57.21	4373.24
Employees	0	7339	16.93	5.30	34.13	1.65	16.00	0.12	220.09
	1	1926	12.93	3.17	28.96	1.04	9.60	0.12	220.09
	2	695	21.34	5.55	42.34	1.36	18.40	0.12	220.09
	3	163	23.13	2.90	58.46	1.30	8.40	0.12	220.09
	4	28	27.25	19.50	28.30	0.74	51.50	0.38	80.00

5.3. Regression Analysis

5.3.1. Simple Regression Analysis

The next step in the data analysis was to find out whether the company performance as measured by selected company fundamentals and annual return is significantly affected by the marital status of the respective business executive. Table 6 reports the results of the simple regression analysis including coefficients and t-statistics. The table is divided into five panels, i.e., Panel A, B, C, D, and E, which report the results for independent variables 'status 1,' 'married,' 'divorced,' 'divorced 2,' and 'ever-married,' respectively.

Panel A indicates that there is no statistically significant linear relationship between the dependent variable and marital status 1 as defined in section 5.2. It means that marriage and divorce together have a mixed effect on the examined dependent variable. Further analysis reveals that marriage evidently has a negative effect while divorce has a positive effect on the dependent variable. Panel B shows a significant relationship at the 5% level for dependent variables ROA and net profit margin and at the 1% level for dependent variables ROE, operating income, net income, retained earnings, total revenue, and total number of employees. The independent variable examined compares never married and married executives. In all instances, the relationship between variables is negative which denotes that company performance is lower when the executive is married. Thus, marriage proves to be detrimental to business success.

Panel C indicates significance at the 10% level for dependent variable retained earnings, at the 5% level for variables operating income and net income, and at the 1% level for variables total revenue and total number of employees. The independent variable 'divorced' compares divorced to never married executives. The relationship between variables is positive across the

panel. Thus, when an executive is divorced, the results show that his or her company reports higher retained earnings, operating income, net income, total revenue, and total number of employees. Panel D reports a significant relationship at the 10% level for dependent variables ROA and ROE, at the 5% level for net profit margin, and at the 1% level for operating income, net income, retained earnings, total revenue, and total number of employees. The independent variable 'divorced 2' examines how the company performance changes when married and divorced executives are compared. The relationship between the dependent and independent variable is positive in all instances and so it can be concluded that the company performance improves when the business executive is divorced. Therefore, divorce positively contributes to firm performance.

Finally, Panel E shows results for the independent variable 'ever married', which compares never married executives to those who have been married, i.e., are married or divorced. Significance at the 10% level is reported for variable ROA and at the 5% level for variables ROE and retained earnings. The relationship between the dependent and independent variable is negative for all three dependent variables. Therefore, ROA, ROE, and retained earnings are lower when an executive has ever been married in comparison to a never married executive. Evidently, the negative effect of marriage weighs more in comparison to the positive effect of divorce. The deleterious impact of marriage may originate in the amount of distraction that marriage can generate. For instance, if a marriage is not going well, then a higher level of emotional distress may cloud the decision maker's judgement, and therefore negatively influence the firm's performance. On the contrary, divorce can be a constructive and therefore satisfactory solution to an unhappy marriage. When stress from spousal disputes goes away, the executive

can fully concentrate on his or her professional responsibilities, which subsequently results in improved company performance.

However, as shown in Table 6, R-squared has a value close to zero in every instance across all five panels which indicates that the variation in the dependent variable is not accounted for by the specified explanatory variable and therefore is not explained by the model. There are other factors that may affect the selected company performance measures.

Table 6
Simple regression analysis: Status 1

This table reports the results of a simple regression analysis of company fundamentals and annual return based on the marital status of business executives, i.e., CEOs and CFOs. Marital status is defined by status 1 which is further explained in Table 3. The company fundamentals analyzed are return on assets (ROA), return on equity (ROE), net profit margin, operating income, net income, retained earnings, total revenue, and total number of employees (Employees).
Panel A reports the results for the key independent variable "status 1" which takes a value of 0,1, and 2 as explained in Table 3. Panel B reports the results for the key independent variable "married" which takes a value of 1 when an executive is married and 0 when he or she has never been married. Panel C reports the results for the key independent variable "divorced" which takes a value of 1 when an executive is divorced and 0 when he or she has never been married. Panel D reports the results for the key independent variable "divorced 2" which takes a value of 1 when an executive is divorced and 0 when he or she is married. Lastly, Panel E reports the results for the key independent variable "ever married" which takes a value of 1 when an executive is married or divorced and a value of 0 when he or she has never been married.
N, i.e., the number of records per company characteristic per panel, varies because some values in the analyzed sample were missing. The reported t-statistics are in parentheses. The sample period ranges from January 1992 to December 2012.
* Significant at the 10% level; ** Significant at the 5% level; *** Significant at the 1% level.

Simple regression analysis: Status 1									
					Dependent variables				
Independent variables	ROA	ROE	Annual return	Net profit margin	Operating income	Net income	Retained earnings	Total revenue	Employees
Panel A									
Status 1	-0.002	-0.009	0.013	-0.001	4.936	2.305	-27.674	160.589	0.314
	(-0.95)	(-1.37)	(1.41)	(-0.24)	(0.23)	(0.17)	(-0.46)	(0.93)	(0.56)
R-squared	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
N	10218	10218	10036	10210	10198	10218	10184	10218	10151
Panel B									
Married	-0.007**	-0.027***	0.017	-0.010**	-93.691***	-63.542***	-325.154***	-1090.788***	-3.204***
	(-2.29)	(-2.67)	(1.21)	(-2.25)	(-2.91)	(-3.11)	(-3.60)	(-4.37)	(-3.83)
R-squared	0.001	0.001	0.000	0.001	0.001	0.001	0.001	0.002	0.002
N	9494	9494	9319	9492	9474	9494	9460	9494	9428
Panel C									
Divorced	0.002	0.002	0.021	0.009	122.787**	80.160**	284.551*	1756.950***	4.637***
	(0.45)	(0.16)	(1.01)	(1.38)	(2.29)	(2.36)	(1.93)	(4.11)	(3.41)
R-squared	0.000	0.000	0.000	0.000	0.001	0.001	0.001	0.002	0.001
N	8114	8114	7970	8107	8098	8114	8088	8114	8062
Panel D									
Divorced 2	0.009*	0.029*	0.005	0.019**	216.478***	143.702***	609.705***	2847.738***	7.841***
	(1.66)	(1.73)	(0.18)	(2.34)	(3.73)	(4.05)	(3.87)	(6.03)	(5.19)
R-squared	0.001	0.001	0.000	0.002	0.005	0.006	0.005	0.013	0.010
N	2828	2828	2783	2821	2824	2828	2820	2828	2812
Panel E									
Ever married	-0.004*	-0.019**	0.018	-0.005	-38.192	-26.753	-168.620**	-361.735	-1.188
	(-1.73)	(-2.17)	(1.45)	(-1.28)	(-1.29)	(-1.43)	(-2.05)	(-1.54)	(-1.56)
R-squared	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000
N	10218	10218	10036	10210	10198	10218	10184	10218	10151

5.3.2. Multiple Regression Analysis

For the purpose of the multiple regression analysis, additional explanatory variables were included to examine the effect of marital status of business executives on company performance when the effects of other variables are accounted for. Table 7 reports the results of the multiple regression analysis including coefficients and t-statistics. Similar to Table 6, Table 7 is divided into five panels, i.e., Panel A, B, C, D, and E, which report the results for independent variables 'status 1,' 'married,' 'divorced,' 'divorced 2,' and 'ever-married,' respectively.

Panel A reports a significant relationship at the 5% level for dependent variable total number of employees and at the 1% level for total revenue. This means that there is a positive relationship between dependent variables total number of employees and total revenue and the key independent variable marital status 1. The other dependent variables are not affected which confirms the conclusion of mixed effect of marriage and divorce as explained in section 5.3.1. However, the positive effect of divorce is stronger as proven by the positive and statistically significant coefficient estimates of total revenue and total number of employees. Panel B shows significance at the 10% level for dependent variables ROA and ROE and at the 5% level for net profit margin and total number of employees. 1% level significance was found for operating income, net income, retained earnings, and total revenue. The relationship between the key independent variable and the dependent variables is negative in all instances. Consistent with previous findings, it can be inferred that marriage is detrimental to a firm's profitability and growth. Based on the reported coefficient estimates and the corresponding t-statistics, strong evidence exists that when a top executive is married, return on assets decreases by 0.7%, return

on equity decreases by 2.1%, and net profit margin decreases by 1.3%. Moreover, operating income drops by about 51 million and net income by about 44 million dollars. Retained earnings decrease by 267 million while total revenue drops by 621 million dollars. The firm has 1687 fewer employees.

Panel C indicates a significant relationship at the 10% level for dependent variable retained earnings but significance at the 1% level was determined for variables operating income, net income, total revenue, and total number of employees. When comparing never married executives against divorced executives, the results show higher company performance measures for divorced executives, based on the positive relationship between the dependent variables and the key independent variable. In line with previous assumptions, when controlling for other variables, the results speak to the beneficial influence of divorce. The coefficient estimates indicate that such firms generate about 68 million dollars more in operating income and 50 million dollars more in net income. The results further show that retained earnings increase by 135 million while total revenue increases by about 1.4 billion dollars and that such companies retain 5338 additional employees. Panel D shows significance at the 5% level for dependent variable ROA and at the 1% level for net profit margin, operating income, net income, retained earnings, total revenue, and total number of employees. The relationship between these company performance measures and the key independent variable ‘divorced 2’ is positive. Thus, the results yet again show that divorce is beneficial while marriage is detrimental to business. Specifically, company performance deteriorates when the boss is married and improves when he or she is divorced. Return on assets goes up by 1% and net profit margin increases by 2.6%. The coefficient estimates indicate that firms with divorced executives generate about 123 million

dollars more in operating income and 94 million dollars more in net income as opposed to companies with married CEOs or CFOs. They also keep almost 411 million more in retained earnings and therefore increase shareholders' wealth. The results further show that total revenue increases by about 1.38 billion dollars and that such companies retain about 5400 more employees.

Finally, Panel E shows that a significant negative relationship was determined between the key independent variable 'ever married,' which compares never married executives to executives who are married or divorced, and dependent variables net profit margin, net income, and retained earnings. Consistent with the assumption of the simple regression analysis, multiple regression analysis confirms that the negative effect of marriage is stronger when combined with and compared to the positive effect of divorce. Interestingly enough, the analysis has revealed that annual return is not affected by marital status. The stock market does not appear to be responsive to marital changes. One of the reasons behind this may be limited disclosure of private events.

The adjusted R-squared reported in Table 7 is very low across all five panels for dependent variables ROA, ROE, annual return, and net profit margin. Such a finding indicates that the regression model does not explain the variation in these four dependent variables. However, the regression model well explains the variation in dependent variables operating income, net income, retained earnings, and total revenue across all panels with adjusted R^2s around 80-90%. Lastly, about 60% of variation in the total number of employees is explained by the model.

Table 7
Multiple regression analysis: Status 1

This table reports the results of a multiple regression analysis of company fundamentals and annual return based on the marital status of business executives, i.e., CEOs and CFOs. Marital status is defined by status 1 which is further explained in Table 3. The company fundamentals analyzed are return on assets (ROA), return on equity (ROE), net profit margin, operating income, net income, retained earnings, total revenue, and total number of employees (Employees).
Panel A reports the results for the key independent variable "status 1" which takes a value of 0,1, and 2 as explained in Table 3. Panel B reports the results for the key independent variable "married" which takes a value of 1 when an executive is married and 0 when he or she has never been married. Panel C reports the results for the key independent variable "divorced" which takes a value of 1 when an executive is divorced and 0 when he or she has never been married. Panel D reports the results for the key independent variable "divorced 2" which takes a value of 1 when an executive is divorced and 0 when he or she is married. Lastly, Panel E reports the results for the key independent variable "ever married" which takes a value of 1 when an executive is married or divorced and a value of 0 when he or she has never been married.
The other independent variables, i.e., control variables, include additional company characteristics, specifically total assets (in trillions), the age of executives (Age) (in years), and dummy variables that indicate whether an executive is a CEO or a CFO (If CEO). The independent variable takes a value of 1 if an executive is a CEO and a value of 0 if an executive is a CFO. Controls are also included for industry fixed effects (SIC code dummies).
N, i.e., the number of records per company characteristic per panel, varies because some values in the analyzed sample were missing. The reported t-statistics are in parentheses. The sample period ranges from January 1992 to December 2012.
* Significant at the 10% level; ** Significant at the 5% level; *** Significant at the 1% level.

Multiple regression analysis: Status 1									
					Dependent variables				
Independent variables	ROA	ROE	Annual return	Net profit margin	Operating income	Net income	Retained earnings	Total revenue	Employees
Panel A									
Status 1	-0.001	-0.007	0.011	-0.003	6.149	0.674	-50.699	265.772***	1.059**
	(-0.58)	(-0.98)	(1.16)	(-0.99)	(0.69)	(0.09)	(-1.58)	(2.72)	(2.41)
Total assets	0.375***	1.397***	-1.492***	0.900***	102721.454***	59410.349***	265180.047***	774623.108***	1828.339***
	(4.97)	(4.31)	(-4.08)	(8.62)	(56.06)	(38.39)	(38.48)	(55.38)	(34.15)
Age	0.000**	0.000	-0.002*	0.001***	2.219***	1.366**	5.224*	-4.679	0.149***
	(2.11)	(0.05)	(-1.94)	(3.55)	(2.75)	(1.98)	(1.76)	(-0.67)	(4.52)
If CEO	0.004	-0.008	0.024	-0.005	-60.069*	-62.458*	-178.019	398.014*	0.272
	(0.49)	(-0.24)	(0.66)	(-0.43)	(-1.87)	(-1.76)	(-1.38)	(1.89)	(0.25)
SIC code dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R-squared	0.118	0.050	0.037	0.069	0.875	0.747	0.763	0.844	0.642
N	8678	8678	8588	8672	8665	8678	8648	8678	8623
Panel B									
Married	-0.007*	-0.021*	0.019	-0.013**	-51.114***	-44.376***	-266.922***	-621.245***	-1.687**
	(-1.88)	(-1.86)	(1.16)	(-2.55)	(-4.07)	(-3.73)	(-5.43)	(-6.39)	(-2.56)
Total assets	0.298***	1.262***	-1.481***	0.820***	100655.435***	57881.125***	260861.041***	752133.144***	1802.092***
	(3.68)	(3.54)	(-3.67)	(7.51)	(50.37)	(34.18)	(34.51)	(51.07)	(31.49)
Age	0.000**	0.000	-0.002**	0.001***	2.699***	1.828**	5.784*	-3.340	0.188***
	(2.40)	(0.53)	(-2.35)	(3.20)	(3.11)	(2.47)	(1.80)	(-0.45)	(5.35)
If CEO	0.005	-0.009	0.022	-0.003	-66.251**	-69.133*	-198.811	441.335**	0.874
	(0.51)	(-0.27)	(0.59)	(-0.28)	(-1.96)	(-1.87)	(-1.49)	(2.02)	(0.81)
SIC code dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R-squared	0.116	0.049	0.036	0.067	0.865	0.727	0.744	0.841	0.628
N	8049	8049	7962	8048	8036	8049	8019	8049	7995

Panel C									
Divorced	0.004	0.006	0.013	0.006	68.396***	50.462***	135.068*	1408.941***	5.338***
	(1.01)	(0.38)	(0.58)	(0.84)	(3.34)	(2.88)	(1.92)	(5.57)	(5.04)
Total assets	0.382***	1.343***	-1.645***	0.910***	104984.125***	61579.463***	270278.618***	794202.379***	1909.184***
	(4.61)	(3.77)	(-4.18)	(7.74)	(50.36)	(35.55)	(34.19)	(49.87)	(31.78)
Age	0.001***	0.000	-0.002*	0.001***	2.511**	1.501*	7.344**	-7.697	0.193***
	(2.61)	(0.29)	(-1.86)	(3.21)	(2.57)	(1.84)	(2.09)	(-0.90)	(5.09)
If CEO	-0.001	-0.019	0.045	-0.018*	-70.871*	-81.807*	-289.989*	152.134	-2.155*
	(-0.15)	(-0.53)	(1.10)	(-1.87)	(-1.81)	(-1.89)	(-1.89)	(0.67)	(-1.72)
SIC code dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R-squared	0.129	0.054	0.036	0.073	0.876	0.758	0.765	0.840	0.679
N	6907	6907	6832	6902	6898	6907	6883	6907	6862
Panel D									
Divorced 2	0.010*	0.019	0.005	0.026***	123.445***	94.014***	411.437***	1380.982***	5.406***
	(1.76)	(0.89)	(0.16)	(2.62)	(6.71)	(5.68)	(6.06)	(7.62)	(5.05)
Total assets	0.479***	1.221***	-1.249*	1.190***	99581.571***	56051.058***	253589.115***	776635.218***	1564.896***
	(3.92)	(2.58)	(-1.75)	(5.10)	(39.46)	(23.62)	(26.55)	(35.04)	(18.82)
Age	0.000	-0.001	-0.001	0.001**	-1.117	-0.484	-5.242	-16.555**	-0.056
	(-0.16)	(-0.57)	(-0.28)	(2.40)	(-1.20)	(-0.54)	(-1.31)	(-1.98)	(-1.03)
If CEO	0.015	0.000	-0.029	0.028	-66.208*	-26.664	12.916	428.874	0.883
	(0.67)	(0.01)	(-0.35)	(0.77)	(-1.85)	(-0.62)	(0.07)	(1.23)	(0.37)
SIC code dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R-squared	0.119	0.048	0.039	0.086	0.918	0.801	0.839	0.895	0.647
N	2400	2400	2382	2394	2396	2400	2394	2400	2389
Panel E									
Ever married	-0.004	-0.015	0.018	-0.008*	-16.673	-18.943*	-157.687***	-25.440	0.175
	(-1.33)	(-1.56)	(1.27)	(-1.93)	(-1.40)	(-1.73)	(-3.50)	(-0.23)	(0.29)
Total assets	0.377***	1.402***	-1.492***	0.904***	102750.787***	59432.818***	265270.417***	775111.397***	1829.979***
	(4.99)	(4.32)	(-4.08)	(8.65)	(56.04)	(38.40)	(38.50)	(55.27)	(34.12)
Age	0.000**	0.000	-0.002*	0.001***	2.186***	1.337*	5.057*	-5.046	0.148***
	(2.08)	(0.03)	(-1.93)	(3.51)	(2.71)	(1.94)	(1.71)	(-0.72)	(4.51)
If CEO	0.005	-0.007	0.024	-0.005	-58.457*	-61.245*	-173.322	425.352**	0.368
	(0.50)	(-0.23)	(0.66)	(-0.41)	(-1.82)	(-1.72)	(-1.35)	(2.02)	(0.34)
SIC code dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R-squared	0.118	0.050	0.037	0.069	0.875	0.747	0.763	0.843	0.642
N	8678	8678	8588	8672	8665	8678	8648	8678	8623

5.3.3. Analysis of Results

Consistent with the summary statistics and results of the simple regression analysis, it can be concluded that marital status of CEOs and CFOs is a significant determinant of company performance as measured by ROA, ROE, net profit margin, operating income, net income, retained earnings, total revenue, and total number of employees. The performed analysis explains that when executives are married, their companies report lower values for the affected variables in comparison to both executives that have never married and those who are divorced. This finding, however, is not consistent with the traditional Becker's (1973) theory of marriage which is supposed to cause an increase in productivity resulting from division of labor. Rather, it suggests that marriage can have a disruptive effect on CEO/CFO productivity. This follows conclusions formulated by researchers Lu, Ray, and Teo (2016) in their behavioral finance study on the change in performance of hedge fund managers as related to the change in their marital status. The authors suggest that while money managers are distracted by their personal events, the fund performance deteriorates.

The results of the regression analysis are in line with previous works in corporate finance that evaluate the effects of other personal events besides marriage and divorce on CEOs' performance as represented by the respective company characteristics. Bennedsen, Pérez-González, and Wolfenzon (2012) found that when a CEO is hospitalized, the firm performance decreases. Moreover, the researchers show that the CEO effect on company performance is unique because similar effects are not observed when other top executives are sick. Bennedsen, Pérez-González, and Wolfenzon (2010) also examined the effects of CEOs' deaths and deaths in CEOs' families on the firm performance. Their findings show that such life events have an

impact on the firm performance in a negative way, i.e., firm operating profitability, investment rates, and sales growth decline. Bennedsen, Pérez-González, and Wolfenzon (2010, 2012) conclude that CEOs play a key role when it comes to company performance. They associate the decline in firm performance with reduced attention of the boss who is going through adverse personal life events, particularly deaths of family members, and therefore does not allocate sufficient amount of attention to firm-related activities.

Larcker, McCall, and Tayan (2013) are concerned whether boards and shareholders should start worrying when a CEO and the spouse separate. While unsuccessful risk-taking activities may lead to a decrease in shareholders wealth, the results of this study show an increase in firm performance levels when the boss is divorced. On the contrary, married executives are linked to lower company performance measures when compared to their never married or divorced competitors. Should shareholders be alarmed when the boss decides to take the plunge and take off for the altar? Furthermore, should personal lives of CEOs be protected or should they be subject to disclosure? As corporate lawyer Kerry Berchem (2013) comments, the effects of CEO personal events often extend beyond the realm of purely private matters. The author suggests that members of the C-suite be encouraged to confide in the board regarding potentially deleterious personal challenges in order to protect the best interests of the company and its shareholders.

The observed negative company-level effects of marriage may originate in marital problems that bring about serious distraction from professional responsibilities. Generally, business executives are exposed to high levels of stress at work. Therefore, if they are inattentive and not able to fully concentrate on the decisions that need to be made or problems that must be

resolved, the entire company will be impacted. By contrast, divorce can be an appropriate solution to an unfavorable state of one's private life that will contribute not only to the personal well-being of the executive, but even more importantly to the firm's profitability and growth, as substantiated by the analysis. Moreover, a single executive has more time to devote to company matters as he or she is less distracted by private events and situations that may result from obligations and responsibilities that marriage often represents. It would be important to conduct advanced research as a means to further explore the causality and chances of different effects of marriage and divorce on the company performance.

6. CONCLUSION

This research paper investigates differences in company performance levels and it examines whether such differences are determined by the marital status of the respective CEO or CFO. The quantitative changes in company performance measures across marital statuses are analyzed using simple and multiple regression models. Evidently, marriage has a negative impact on company fundamentals, whereas divorce has a positive impact on company fundamentals, and thus on company performance. After controlling for other variables, the results of the multiple regression analysis indicate that the dependent variable annual return is not affected by the marital status of business executives. Moreover, the adjusted R^2s for return on assets, return on equity, annual return, and net profit margin are low, which suggests that other important factors exist besides the specified explanatory variables that influence return on investment, return on equity, and annual return.

Nonetheless, it must be noted that many regressions do not indicate that a cause-and-effect relationship exists between variables (Braun & Soskin, 2013). The authors explain that when explanatory and dependent variables are jointly affected by the same factors that are not included in the regression, the result may be a regression fit. Therefore, one of the main concerns of this analysis is omission of explanatory variables that may have a significant effect on the examined fundamentals and annual return. For example, time was not included as a variable and so the analysis is in fact cross-sectional as opposed to time-series.

In the future, it would be very interesting to further explore on a more advanced level the complex relationships between marital events of business executives and the performance of the companies they oversee. It would be intriguing to follow the path of Dr. Lu, Ray, and Teo and

examine whether and how the company performance changes in the short-term perspective before and after a marital event, i.e., a marriage or a divorce, takes place in the life of a business executive.

APPENDIX A:
GRAPHS – STATUS 1

Figures 2-10 show the graphical representation of median values for analyzed company fundamentals, i.e., return on assets, return on equity, net profit margin, operating income, net income, retained earnings, total revenue, and total number of employees, and annual return sorted by status 1, which is explained in Table 3. Return on assets, return on equity, annual return, and net profit margin are reported as percentages. Operating income, net income, retained earnings, and total revenue are reported in millions of dollars. The total number of employees is reported in thousands.

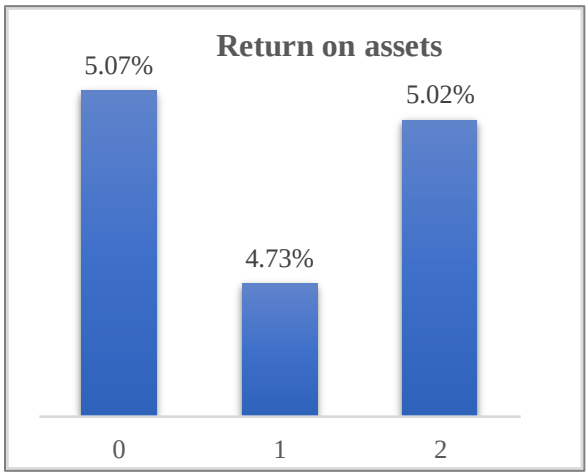

Figure 2: Median return on assets

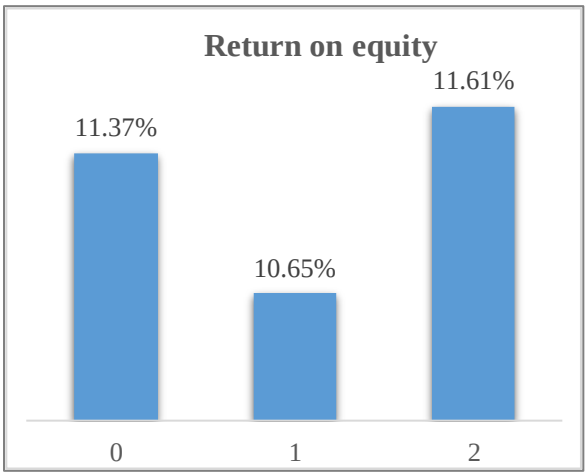

Figure 3: Median return on equity

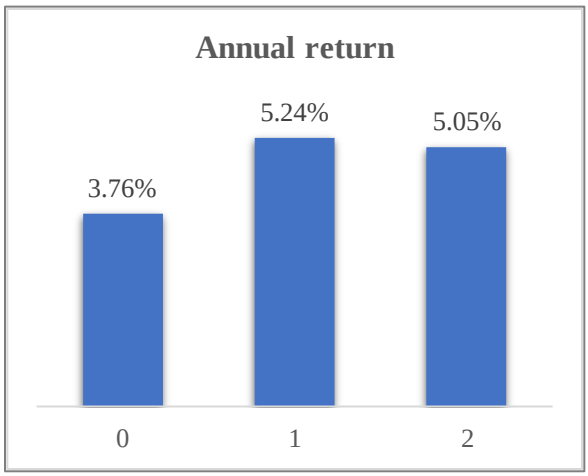

Figure 4: Median annual return

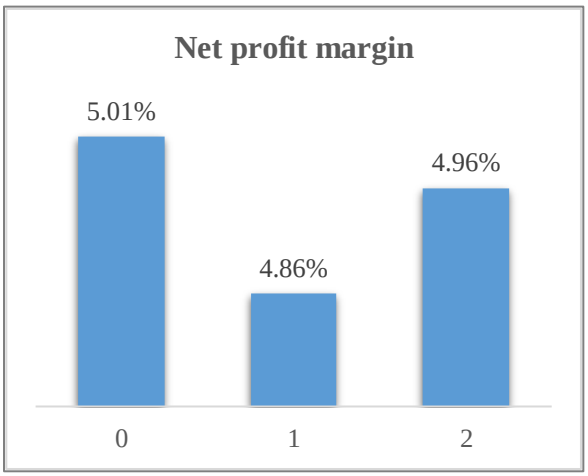

Figure 5: Median net profit margin

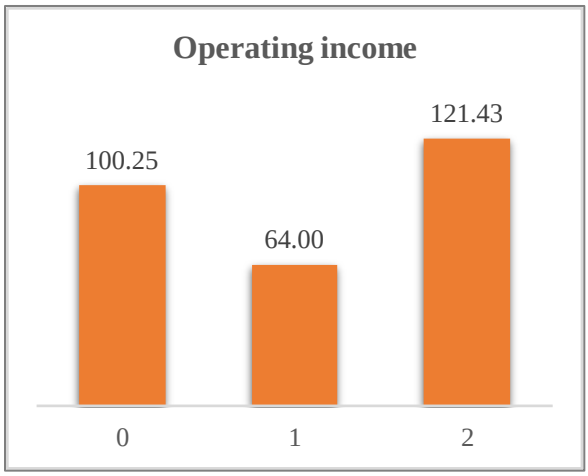

Figure 6: Median operating income (in millions USD)

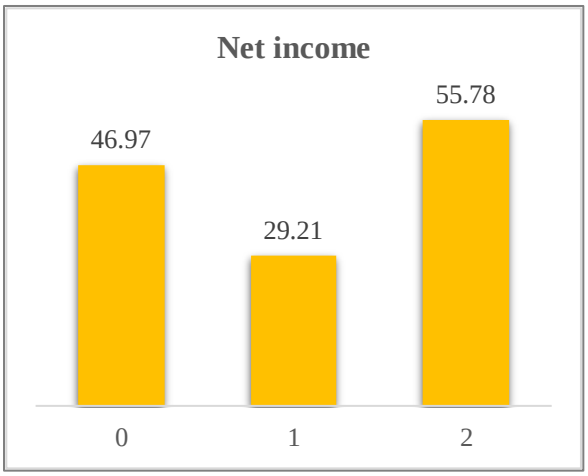

Figure 7: Median net income (in millions USD)

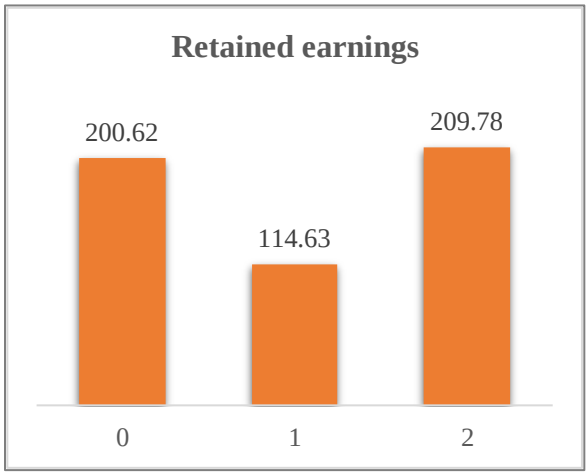

Figure 8: Median retained earnings (in millions USD)

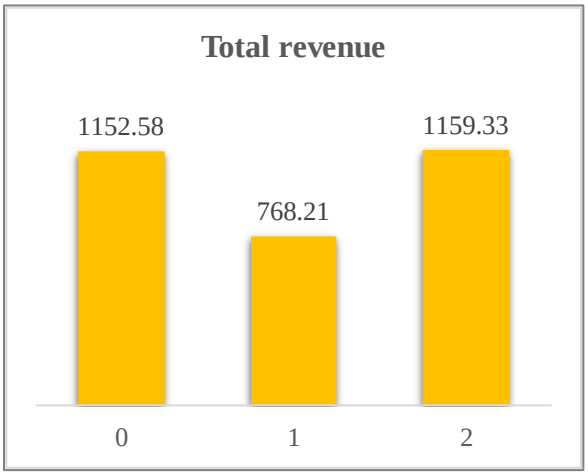

Figure 9: Median total revenue (in millions USD)

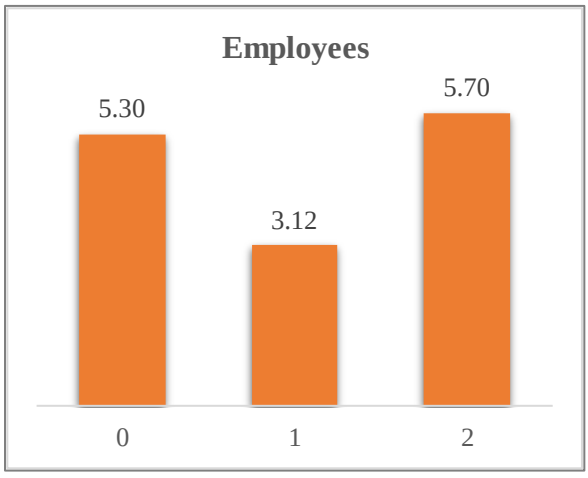

Figure 10: Median employees (in thousands)

APPENDIX B:
GRAPHS – STATUS 2

Figures 11-19 show the graphical representation of median values for analyzed company fundamentals, i.e., return on assets, return on equity, net profit margin, operating income, net income, retained earnings, total revenue, and total number of employees, and annual return sorted by status 2, which is explained in Table 3. Return on assets, return on equity, annual return, and net profit margin are reported as percentages. Operating income, net income, retained earnings, and total revenue are reported in millions of dollars. The total number of employees is reported in thousands.

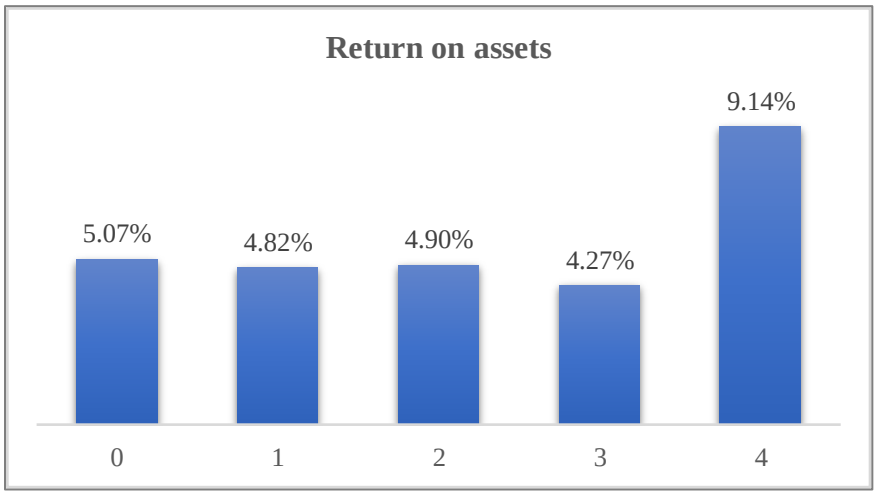

Figure 11: Median return on assets

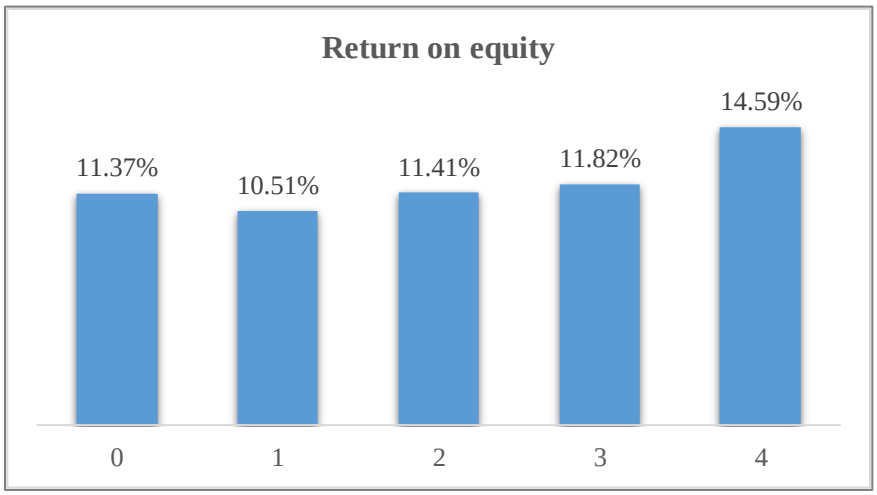

Figure 12: Median return on equity

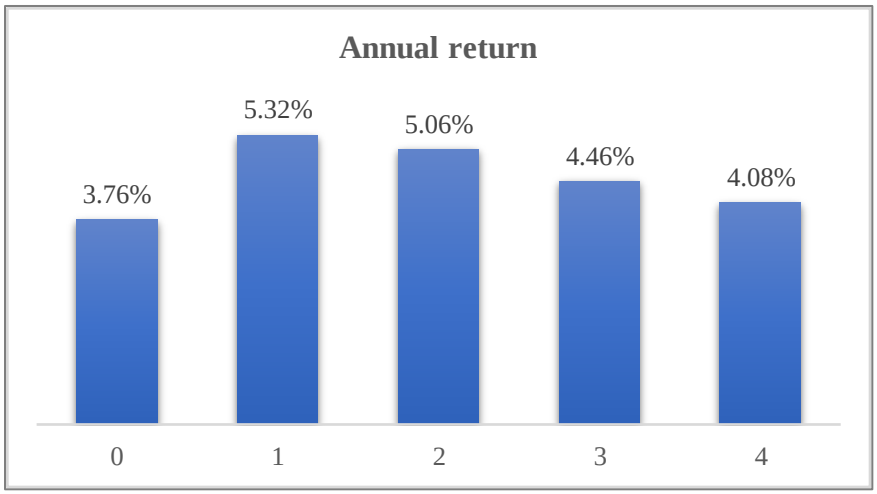

Figure 13: Median annual return

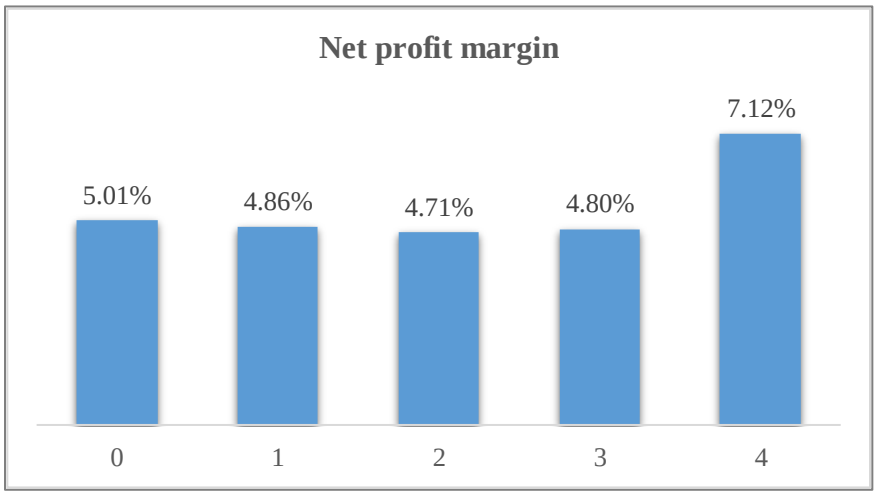

Figure 14: Median net profit margin

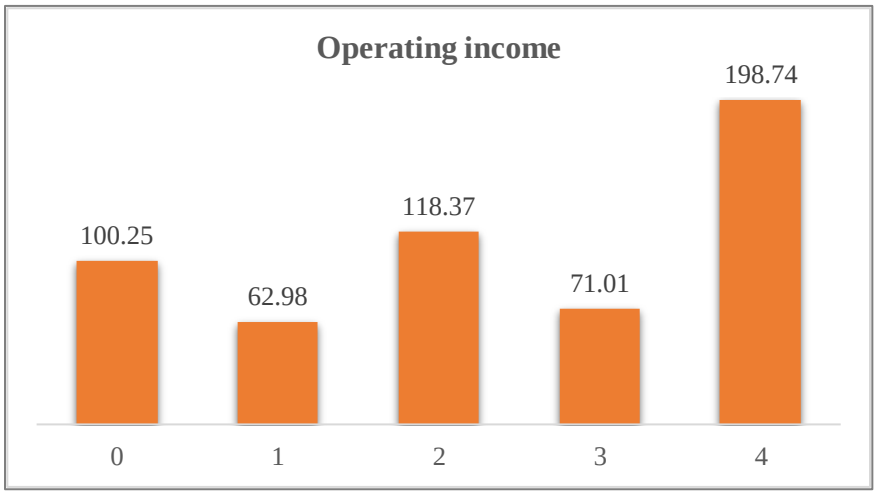

Figure 15: Median operating income (in millions USD)

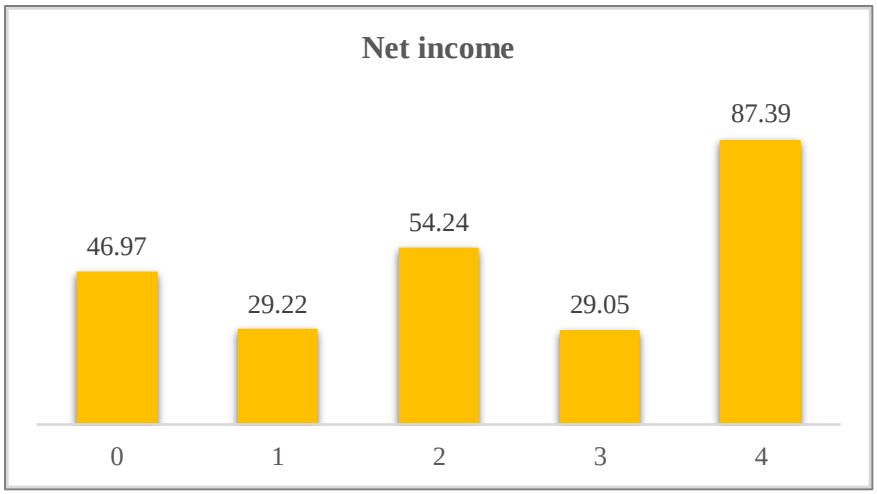

Figure 16: Median net income (in millions USD)

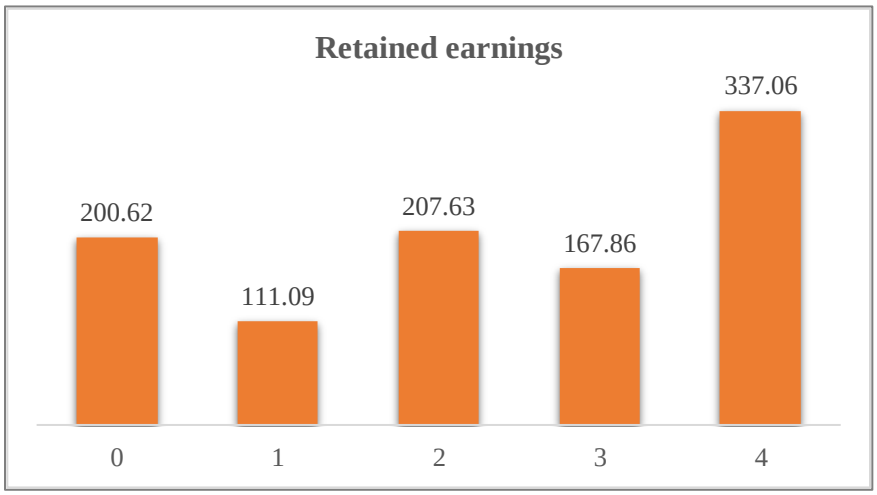

Figure 17: Median retained earnings (in millions USD)

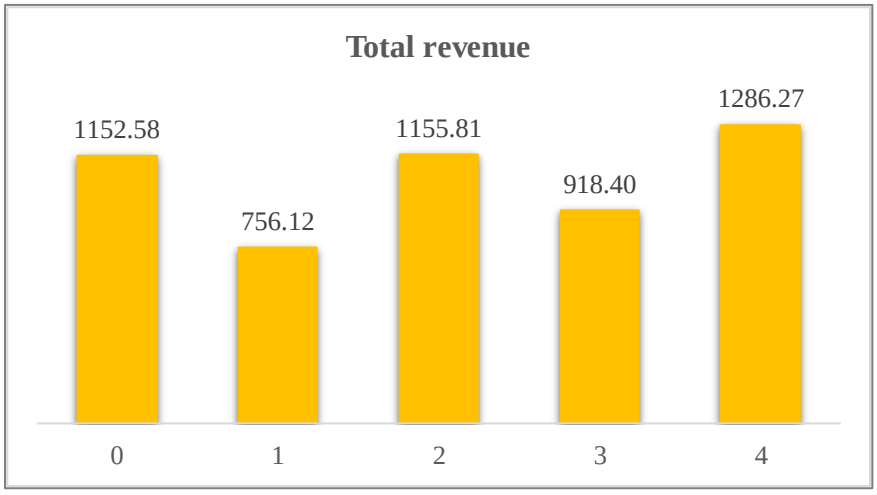

Figure 18: Median total revenue (in millions USD)

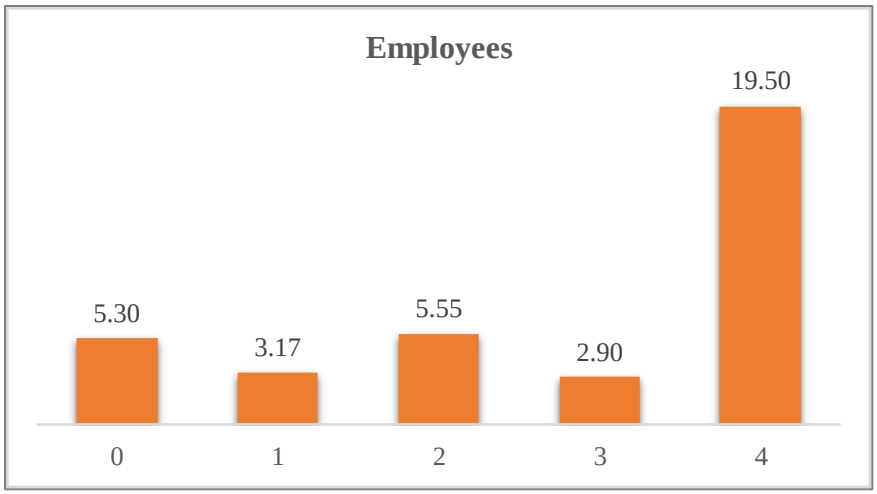

Figure 19: Median employees (in thousands)

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