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Shattering Glass Ceilings: Where are all of the Women in Finance?

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At a time when women are equally represented in professional fields such as medicine and academia, the finance industry is still facing a lack of gender diversity, most notably at the C-Suite level. Statistics on the paucity of women paint a bleak picture, despite the fact that women are awarded majority of undergraduate and graduate degrees in the United States, a reversal from just one generation ago. This begs the question, what is deterring women from a career in finance? Are compensation discrepancies at play? This paper seeks to examine if being a female truly penalizes a woman in regards to annual compensation within the financial services industry.

Shattering Glass Ceilings: Where are all of the Women in Finance?

Rebecca Schubach

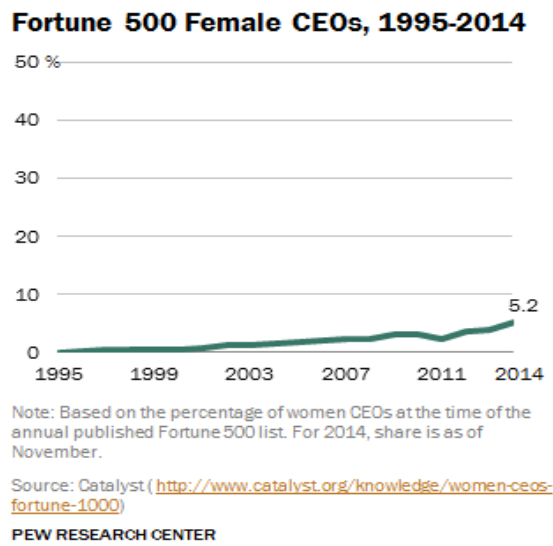
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Business and Economics Department

Where Are the Women in Finance? An Introduction:

At a time when women are achieving equality in monetary compensation and increasing their numbers in most job market sectors, female employees continue to be notoriously scarce in the financial services industry (Ritzholtz, 2016). Women now constitute 52% of the countries physicians and 32% of the United States' lawyers, but in the financial services industry, women persistently are the minority, most notably at the CEO level (BLS, 2019). Gender disparity refers to the differences in women's and men's social status and well-being. These distinctions typically favor men and are often institutionalized through law, justice and social norms. While the gender gap in the financial industry has improved marginally since the turn of the century, the statistics remain extremely skewed and do not reflect other professional occupations nor the general population (Ciancio, 2019). As of June 2019, the number of female CEOs is at an all-time high, evident by Figure 1 below, with a total of 33 women at the helm of Fortune 500 companies (Zillman, 2019).

Figure 1:

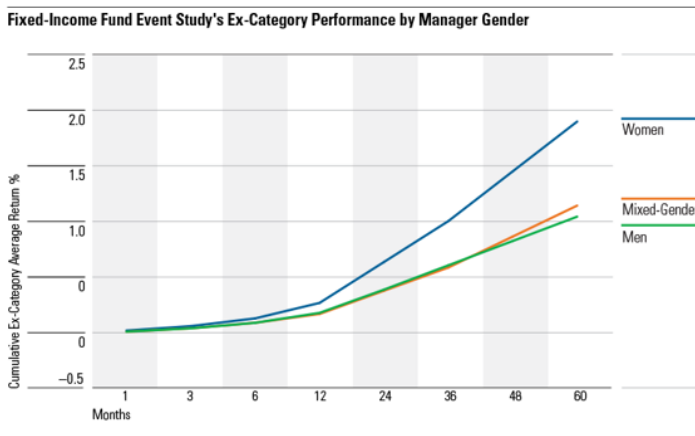


A 2014 Wall Street Journal research study which analyzed women's earnings and compensation in the ten major occupation groups where women lagged the most, noted five were in finance. This included securities and commodities sales agents, personal financial advisors, financial clerks, financial managers, financial examiners, and other miscellaneous finance jobs. Within financial services, the most notable pay gap was among certified financial planners, where women earned approximately \$32,000 a year less on average, according to this Wall Street Journal study of 500 advisors. The CFP Board which certifies financial planners dubbed it the "feminine famine". An advisory panel concluded gender discrimination were among factors dissuading women in the profession (Adamy & Overberg, 2016).

Historical financial performance has demonstrated that companies where women accounted for at least 30% of their executives typically demonstrated higher profits than those with less representation (Sargis & Wing). But, in a survey conducted by Fidelity Investments through a survey titled "Women and Money", less than 9% of respondents thought that women were better

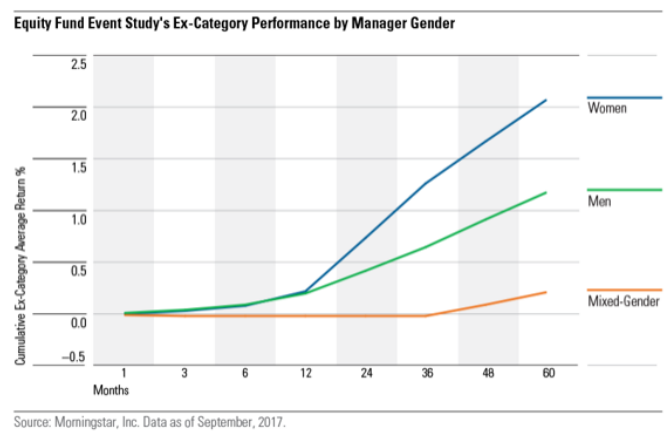
investors than men (Cannivet, 2018). Less than 2% of the industry’s assets are managed by women exclusively in the United States. At top-tier investment firms, approximately 74% of assets are managed solely by men, with mixed-gender teams accounting for the remaining 26%. A Morningstar research report concluded that women fund managers generated annual returns of approximately 100 basis points more than male managed funds over five years, ceteris paribus. This was done by tracking both fund performance and manager performance, and industry standard performance tests, such as portfolio-based tests, regressions, and event studies were performed. This was done for both fixed income and equity funds, illustrated by Figures 2 and 3, respectively. It was concluded that fund performance cannot explain the paucity of women present in the investment industry (Sargis & Wing).

Figure 2:



Source: Morningstar, Inc. Data as of September, 2017.

Figure 3:



Source: Morningstar, Inc. Data as of September, 2017.

Statistics and studies on the issue currently paint a bleak picture. Bloomberg reports that women make up only 17% of employees in venture capital, real estate and private equity firms. This appears noteworthy, as women are awarded 57% of all bachelor’s degrees and 59% of master’s

degrees, a reversal from just one generation ago. This begs the question, where is all this potential and talent going, and what is deterring women from a career in finance? Are compensation discrepancies at play?

Although men and women enter the workforce at the same rate, women begin to fall professionally behind men early in their life. This often happens at the level of the very first promotion, blowing open a gender gap that continues to widen every step up the ladder. As males move upwards, females remain in entry level positions, perpetuating and widening the gap at the leadership level (Fuhrmans, 2019). This disparity also has to do with differences in the psychological thinking patterns of men and women. The Fifth Annual Women in the Workplace study conducted by Lean In and McKinsey & Company, collected data from 329 companies with a collective 13 million employees. Approximately 40% of women believe they are evaluated differently than their male coworkers, while only 14% of men believe this statement. When asked to respond to the statement, “There are too few qualified women in the pipeline”, 13% of women agreed, 21% of men agreed, and human resources noted a 45% agreeance (McKinsey & Company, 2019). This paper will seek to determine if there is a true compensation disparity for women in the financial services industry and if so, the reasons for the discrepancy.

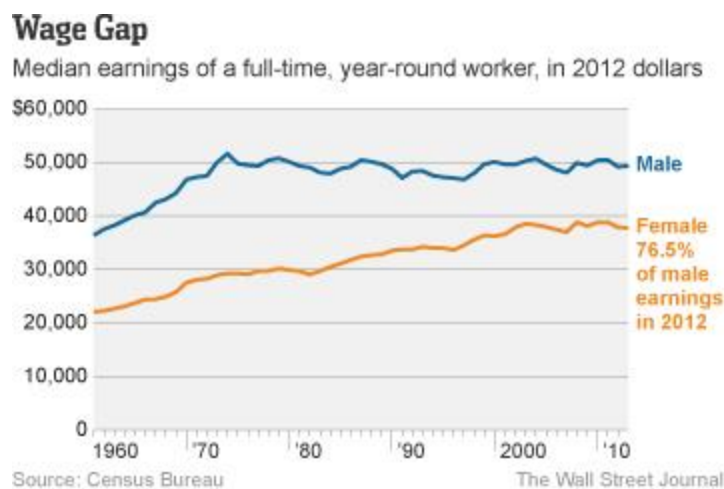
A Review of Existing Literature:

Previous research regarding the wage discrimination among men and women in finance identified numerous other factors, not simply compensation disparity, that are leading to the paucity of senior women in the finance industry. These influences range from the prioritization of family over work, the instinctive conservative nature of women, to the industry-wide

discrimination among executives when assigning projects. When analyzing statistics regarding salaries of men and women, care must be taken to ensure that levels of education and years of experience are comparable.

Madden (2012) highlights the pay wage gap in relation to gender among financial professionals. Women have accounted for approximately one third of financial services professionals consistently over the past decade. While their income has increased minimally in relation to their male counterparts, the earnings gap continues to be present. As Figure 4 below suggests, women now make 66% of the salary of their male colleagues. Therefore, although the earning gap has narrowed, it certainly still exists. Upon closer examination, this compensation disparity consists of multiple important elements.

Figure 4:



The same study analyzed two of the largest stock brokerage firms in the United States. When the number of years of professional experience were controlled, women still earned 12% less than

men at one of the large, but unnamed firms. Although the second large firm that was analyzed had higher compensation for both men and women, the gender compensation gap was still similar. A 20% difference in the median salary is present for brokers with ten years of experience, and an 18% difference for brokers with 25 years of experience. In one of the firms evaluated, women accounted for a mere 14% of stockbrokers, while the other had even fewer women, accounting for only eleven percent of financial employees. Madden also uncovered that the variable gender is statistically significant, with coefficients of -10 and -18, respectively. The evidence was shown to demonstrate significant performance-support bias. Performance-support bias is a practice in which women receive inferior and lower commission work assignments causing a gap in pay. Gender differences were the basis for management's discretionary assignments of sales opportunities, with the end result of gender pay gap among stockbrokers in these two companies (Madden, 2012).

Additionally, there are other factors that could potentially influence this pay discrepancy. An analysis of the same two firms revealed that upper level management gave women secondary assignments and projects to those of their male colleagues. Men and women may consider different lifestyle or family constraints in their career decisions. Thus, the hiring processes is thought to initially separate more women into less high paying specialties. In the financial services industry, wages are linked to commission. This study concluded that because women were assigned to lower profile projects, the end result was lower annual commissions and bonuses (Madden, 2012). Another analysis revealed that among Wall Street investment bankers, longer hours worked increased earnings, but that women earned less than men even when hours and other job and organizational factors were controlled (Roth 2004). Roth's research

demonstrated that within 5-7 years after completing the MBA, women were more likely than men to find themselves moving from high-paying corporate finance jobs into lower-paying jobs in equity research or asset management, in smaller firms, or out of the securities industry.

Roth ultimately concluded that women who stayed in areas like corporate finance and sales and trading at top firms were unusual in two ways. First, they typically had a powerful mentor who supported their careers, and surprisingly this mentor was usually male. Additionally, these women were highly career-committed, determined to be successful, and strategic about managing their careers to maximize their success and longevity within the securities industry. Additionally, among female CFA Charterholders, having a mother who worked in the STEM field increases the probability of a daughter becoming a CFA member by 48% more than a son. (Adam, Barber, & Odean, 2016). Most of these women deliberately chose or moved into areas where their success would not depend on subjective evaluations of performance among male managers and peers. Efforts to increase women's representation at higher echelons of male-dominated occupations and to improve women's relative compensation might focus on counseling women to enter jobs where their contributions are objectively measurable (Roth, 2004).

The perceived ability of female employees has been analyzed. Women are promoted less into commission sales jobs due to the fact that they are considered less aggressive. Women also tend to work for smaller firms than men (Bertrand & Hallock, 2001). Firm executives report that women have less “innate” abilities when it comes to finance (Madden, 2012). As per Figure E in the appendix, only 43% of men view mixed gendered portfolio management teams as ideal.

Additionally, because of real or perceived personality differences, women are not considered as strong investors due to their cautiousness (Eckel & Füllbrunn, 2015). Despite these perceived characteristics, a 2003 study demonstrated that in competitive environments with both men and women, women perform just as well if not even better than men. Groups of men and women were tasked with solving computer mazes. When payoff was determined by individual performance, there is no difference in female performance when compared to males. (Gneezy, Niederle, & Rustichini, 2003).

The lack of women in finance has also been attributed to the math gender gap. While there is no biological advantage to males pursuing STEM, math education of school-aged girls significantly impacts their career as a woman. Stereotypes ingrained in society are prevalent regarding when it comes to women in math, and men are two times as likely to get hired over a woman with the same math proficiencies (Adam, Barber, & Odean, 2016).

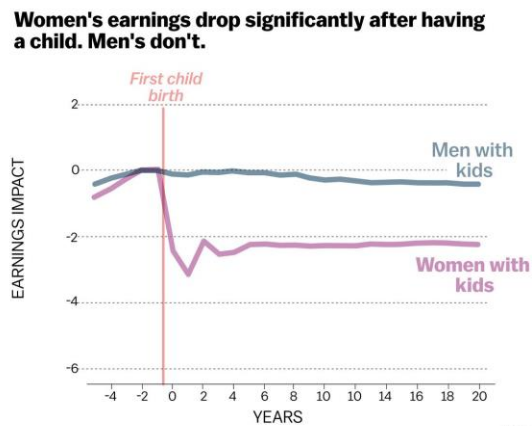
Women tend to face greater time obligations outside of work, and finance is a career that ultimately disproportionately rewards those who work demanding, long, and inflexible hours. (Adam, Barber, & Odean, 2016). These economists behind this research also found that single women are 36% more likely to recapture time from work when compared to single men. Married women with children are 100% more likely than married men to desire to recapture time from work. In this sense, recapture work is defined as working 10% less hours for 10% less pay. Women who highly value conformity and traditional gender roles are less likely to work in finance, and especially unlikely to become CFA Charterholders, evident by Figures A, B, and C, located in the appendix.

Bertrand and Hallock (2001) argue that while this wage inequality could be due to gender discrimination there are other factors as well that could be the root of the issue. One of the less obvious factors could be the difference between men and women that causes women to have a relative lack of commitment to their careers in the long term. This is likely a combination of several factors. There is the societal expectation that women will take responsibility for their families and prioritize them over work (Roth, 2004). See appendix, Figure C.

In addition, the lack of that initial promotion can contribute to the altered trajectory. Therefore, the career tracks for women lead them to most likely be less driven towards management positions but rather to the lesser compensated but more flexible jobs (Roth, 2004). Roth also argues that pregnancy discrimination was commonly done by male colleagues whose wives were homemakers. They perceived that their own aspirations to combine career and family failed to fit a mold for "family" that these men could understand. Figure 5 demonstrates how motherhood impacts earnings. This provides evidence that this is not just an issue domestically, but is also present in other parts of the world such as Denmark. Roth uncovered that gender, marital status, parental status, undergraduate major, and hours per week explained approximately 4% of differences in total compensation. As expected, weekly hours worked had significant impacts on earnings. Each additional hour increased annual compensation by approximately 5%. At the same time, men and women estimated that they worked a similar number of hours per week and had unequal compensation even when they worked the same hours. Women earned 39% less than men with the same background, marital and family status, undergraduate major, experience

in the industry, and hours per week, according to Roth. Roth believes this difference is due to women going to work at smaller tier firms (Roth, 2006).

Figure 5:



Vox

It is hypothesized that maternity leave laws and work-life balance conflicts negatively affect businesswomen salaries and advancement opportunities. Currently in the United States, new mothers receive six weeks of paid maternity leave to care for her newborn child. Women who desire more time off with her baby may apply under Family and Medical Leave Act (FMLA) for an additional six to twelve weeks of unpaid time off with no threat of job loss under the federal law. Within the financial services industry, due to the high stress environment and type of work, there might be pressure by employers to limit leave of absences. According to the World Health Organization, it is ideal that new mothers take a minimum of 16 weeks off post birth to properly care for herself and her newborn (Baker & Milligan, 2008). There is a wage penalty associated with motherhood, and even higher penalties for currently married or previously married women than for single mothers (Blair-Loy & Wharton, 2004). This is due to the loss of experience, or time away from the workplace, while childbearing and causing them to be less productive at work. Investment style Wall Street jobs do not accommodate caregiving responsibilities (Baker

& Milligan, 2008). Within the industry, due to the demand and type of work, there is pressure by employers to limit leave of absence. Due to this pressure, Baker and Milligan hypothesized that women are worried about discrimination and job security if they become pregnant. While U.S. law prohibits firing due to familial status, Wall Street culture puts pressure on pregnant women and young mothers, to continue to work at an intense and persistent pace. These laws are ideal for short term childbearing, but not intensive long term child-rearing (Roth, 2006).

While the treatment of women in the workplace has been garnering media attention recently, it is believed that an important reason so few females strive for a finance career has been present for decades. Wall Street firms such as Morgan Stanley and Goldman Sachs developed stringent policies in the late 1990s to prevent verbal and sexual harassment. Even with these regulations in place, institutional theories suggest that firms have adopted official policies without fully implementing them (Roth, 2006). Roth explains that the poor treatment of women stems from a macho-man environment, and women believe it would be more damaging to their careers to report sexual harassment, or even result in the loss of their jobs. 45% of women believe the policies in place are ineffective. One study conducted reports that 23% of female Wall Street executives were harassed verbally, emotionally, or sexually by their managers, and 11% by their coworkers (Roth, 2006).

The attempt to achieve work-life balance also contributes to this wage discrepancy. However, this issue seems to be mainly focused on women. Baker and Milligan (2001) found that extended maternity leave increases the likelihood that women will return to their pre-birth employer. It is noted that men with school aged children who work as Wall Street investors also experience

work-family balance struggles, but are not penalized as harshly in terms of scheduling conflicts and salary cuts (Bertrand & Hallock, 2001). This is because they are viewed as their children’s secondary caretakers instead of their primary ones (Bertrand & Hallock, 2001). It has been calculated that throughout their careers, women will forfeit about \$274,000 of earnings due to caregiving responsibilities for their children (Blair-Loy & Wharton, 2004). This earning analysis was based on 500 parental respondents, who had children under the age of 16, and worked a minimum of 35 hours per week. These findings are consistent with multiple academic studies.

Data:

For this analysis, data was collected from the Executive Compensation database (Execucomp), which is part of Wharton Research Data Services. This details executive salary, additional compensation, and position in the firm among S&P 1000 companies. For this research, it is imperative to gather data on both men and women. Execucomp details data from 2010-2018, and has useful information such as a company’s return on assets, net sales, and number of employees in addition to salary information. This data was obtained from a connection at Michigan State University. Tables 1 and 2 provide a description of variables used and expected signs.

Variable Descriptions:

Table 1: Description of Variables

Variables	Description
Gross Domestic Product (GDP)	The monetary measure of final goods and services during a specified period of time. The higher the wealth in the US, the more

	people are looking to the finance field for guidance. Measured in billions of current dollars.
Salary (dependent variable)	The annual salary of a finance professional, which includes base pay, bonuses, and stock compensation. Measured in thousands.
Gender	Dummy variable, 0 is professional is female, 1 is the professional is male
Age of Executive	Age of financial executive, measured in years.
Return on Assets	The average annual return on assets, measured in thousands of dollars.
CEO	Dummy variable, 1 if the individual's title is chief executive officer, 0 otherwise.
CAO	Dummy variable, 1 if the individual's title is chief accounting officer, 0 otherwise.
CFO	Dummy variable, 1 if the individual's title is chief financial officer, 0 otherwise.
COO	Dummy variable, 1 if the individual's title is chief operating officer, 0 otherwise.

President	Dummy variable, 1 if the individual's title is president, 0 otherwise.
Tenure	How long the individual has held an executive position, measured in years.
Small	The size of the firm in which an executive works. Classified as “small” if 3,000 or less employees are present.
Medium	The size of the firm in which an executive works. Classified as “medium” if between 3,000 and 14,000 employees are present.
Fertility Rate	The average number of children born to a woman over her lifetime

Other macroeconomic indicators were initially included in this analysis and later removed upon further examination. These indicators included the labor force participation rate for females and the female unemployment rate. A correlation matrix revealed that these variables, along with GDP, had a correlation of over 0.90. Because of this, the most relevant indicator, annual domestic GDP, remained in this analysis. Also, only firms that were classified as small and medium were included. If large were to be included, perfect multicollinearity would exist.

Similarly, a high correlation was present between a firm’s return on assets, net sales, and total assets. Return on assets provides the best indicator of a firm’s performance and therefore remained in this analysis.

Expected Signs:

These hypothesized signs are based on existing literature and economic theory.

Table 2:

Variables	Hypothesized Sign
Gross Domestic Product (GDP)	+, when a greater amount of goods are being produced, this implies that firms are making higher revenues, and therefore paying their employees higher wages
Male	+, being male (or female) will result in a positive annual salary, as per Roth and Bertrand & Hallock
Age of Executive	+, the older the executive, the more seasoned and experienced, hence a higher annual salary
Return on Assets	+, if the firm is generating return on their assets, salaries are going to be positive
CEO	+, holding the title of chief executive officer would increase salary
CAO	+, holding the title of chief accounting officer would increase salary
CFO	+, holding the title of chief financial officer would increase salary
COO	+, holding the title of chief operating officer would increase salary
President	+, holding the title of president would increase salary

Tenure	+, the longer an individual has been an executive, the higher their respective salary
Small	+, working at a firm classified as “small” will positively impact salary
Medium	+, working at a firm classified as “medium” will positively impact salary
Fertility Rate	-, the more children born to a woman, the less she will be working, hence a lower salary

Theoretical Model:

$$\text{Salary} = \beta_0 + \beta_1\text{Male} + \beta_2\text{ExecAge} + \beta_3\text{CAO} + \beta_4\text{CEO} + \beta_5\text{CFO} + \beta_6\text{COO} + \beta_7\text{President} + \beta_8\text{GDP} + \beta_9\text{Return on Assets} + \beta_{10}\text{Tenure} + \beta_{11}\text{GDP} + \beta_{12}\text{Small} + \beta_{13}\text{Medium} - \beta_{14}\text{Fertility Rate} + \varepsilon$$

Results:

To properly analyze the data, an ordinary least squares model was used. This type of model minimizes the sum of squared residuals from the data. The independent variable of executives age was intended to be placed in the model, but due to the lack of variation of this variable, it was taken into account via the intercept. A left-semi log was used so results would be able to be explained in terms of percentages. The data created models for the entire data set (men and women combined), just women, and just men. To analyze this data, SAS programming software was utilized.

Descriptive Statistics:

Table 3: Descriptive Statistics for the entire sample

Variable	N	Mean	Std Dev	Minimum	Maximum
Salary	18637	815.4456606	1267.63	3.3700000	66336.08
lnsalary	18637	6.4234610	0.6709868	1.2149127	11.1024893
ExecutivesAge	18533	54.1457940	6.7009929	28.0000000	80.0000000
ExecutiveIDnumber	18637	35549.16	12456.11	13.0000000	57013.00
tenure	18637	4.0422815	2.6418207	0	9.0000000
tenuresq	18637	23.3188818	21.8818707	0	81.0000000
FiscalYear	18637	2013.94	2.6316426	2010.00	2018.00
FertilityRate	18637	1.8396599	0.0674694	1.7000000	1.9810000
CAO	18637	0.0104094	0.1014968	0	1.0000000
CEO	18637	0.2094758	0.4069454	0	1.0000000
CFO	18637	0.1578580	0.3646176	0	1.0000000
COO	18637	0.0879970	0.2832981	0	1.0000000
PRESIDENT	18637	0.0744218	0.2624632	0	1.0000000
male	18637	0.8637120	0.3431034	0	1.0000000
PresentAge	18535	58.3520367	7.4267981	30.0000000	180.0000000
GDP	18637	17408.26	1742.13	14527.26	20580.22
ReturnonAssets	18637	3.8687217	10.7361902	-229.9400000	357.6910000
Employees_Thous	18637	32.6142442	68.8083081	0.0060000	2300.00
small	18637	0.2305092	0.4211701	0	1.0000000
medium	18637	0.3803187	0.4854782	0	1.0000000
large	18637	0.3891721	0.4875756	0	1.0000000

Table 4: Descriptive Statistics for Women

male	N Obs	Variable	N	Mean	Std Dev	Minimum	Maximum
0	2540	Salary	2540	769.2492433	845.1713157	17.7520000	18988.69
		lnsalary	2540	6.4134470	0.6273574	2.8764982	9.8515989
		ExecutivesAge	2525	53.8186139	6.5834556	30.0000000	80.0000000
		ExecutiveIDnumber	2540	40002.77	12210.19	233.0000000	56746.00
		tenure	2540	2.4956693	2.4209399	0	8.0000000
		tenuresq	2540	12.0870079	16.5233644	0	64.0000000
		FiscalYear	2540	2015.49	2.4194637	2010.00	2018.00
		FertilityRate	2540	1.7959758	0.0746389	1.7000000	1.9310000
		CAO	2540	0.0291339	0.1682148	0	1.0000000
		CEO	2540	0.0759843	0.2650251	0	1.0000000
		CFO	2540	0.1590551	0.3657995	0	1.0000000
		COO	2540	0.1224409	0.3278589	0	1.0000000
		PRESIDENT	2540	0.0570866	0.2320537	0	1.0000000
		PresentAge	2503	55.2596884	6.9483421	31.0000000	86.0000000
		GDP	2540	18307.36	2201.99	14527.26	20580.22
		ReturnonAssets	2540	3.4941362	13.3002505	-84.2050000	357.6910000
		Employees_Thous	2540	24.6633898	80.8376766	0.0060000	2300.00
		small	2540	0.3303150	0.4704191	0	1.0000000
		medium	2540	0.3460630	0.4758072	0	1.0000000
		large	2540	0.3236220	0.4679498	0	1.0000000

Table 5: Descriptive Statistics for Men

1	16097	Salary	16097	822.7351493	1321.89	3.3700000	66336.08
		lnsalary	16097	6.4250412	0.6776196	1.2149127	11.1024893
		ExecutivesAge	16008	54.1974013	6.7180926	28.0000000	80.0000000
		ExecutiveIDnumber	16097	34846.41	12348.97	13.0000000	57013.00
		tenure	16097	4.2863266	2.5921069	0	9.0000000
		tenuresq	16097	25.0911971	22.0965908	0	81.0000000
		FiscalYear	16097	2013.69	2.5794333	2010.00	2018.00
		FertilityRate	16097	1.8465530	0.0635849	1.7000000	1.9310000
		CAO	16097	0.0074548	0.0860215	0	1.0000000
		CEO	16097	0.2305399	0.4211915	0	1.0000000
		CFO	16097	0.1576691	0.3644418	0	1.0000000
		COO	16097	0.0825620	0.2752275	0	1.0000000
		PRESIDENT	16097	0.0771572	0.2668491	0	1.0000000
		PresentAge	16032	58.8348303	7.3829571	30.0000000	180.0000000
		GDP	16097	17266.39	1612.89	14992.05	20540.00
		ReturnonAssets	16097	3.9278288	10.2725646	-229.9400000	170.3000000
		Employees_Thous	16097	33.8688364	66.6286018	0.0100000	568.1000000
		small	16097	0.2147605	0.4106689	0	1.0000000
		medium	16097	0.3857240	0.4867810	0	1.0000000
		large	16097	0.3995154	0.4898140	0	1.0000000

Tables 3-5 illustrate the descriptive statistics for this sample. It is interesting to see that the mean values do not vary greatly between men and women. Men have a slightly larger salary and tenure, in addition to slightly greater return on assets. This shows that men, on average, tend to work for larger firms with stronger financial statements. The standard deviations of salary for women and men can be seen on Tables 4 and 5. It is noteworthy that the standard deviation, or variation, is much greater for women than it is for men

Regression Analysis:

Table 6: Regression for the entire sample

Root MSE	0.62496	R-Square	0.0123
Dependent Mean	6.41345	Adj R-Sq	0.0076
Coeff Var	9.74453		

Parameter Estimates						
Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t	Variance Inflation
Intercept	1	8.69059	1.38306	6.28	<.0001	0
GDP	1	-0.00000838	0.00000655	-1.28	0.2008	1.35303
tenure	1	0.08446	0.04524	1.87	0.0620	77.96628
tenuresq	1	-0.01103	0.00385	-2.87	0.0042	26.25481
FertilityRate	1	-1.23384	0.79444	-1.55	0.1205	22.85642
ReturnonAssets	1	0.00180	0.00093977	1.91	0.0562	1.01559
GAO	1	0.00455	0.07489	0.06	0.9516	1.03167
CEO	1	0.06101	0.04962	1.23	0.2190	1.12424
CFO	1	0.04537	0.03558	1.27	0.2024	1.10132
COO	1	-0.02233	0.03919	-0.57	0.5689	1.07336
PRESIDENT	1	-0.02122	0.05465	-0.39	0.6979	1.04564
small	1	-0.01273	0.03102	-0.41	0.6816	1.38467
medium	1	0.01343	0.03045	0.44	0.6591	1.36420

Above are the results for the entire data set, all executives, both men and women. This is comprised of 18,725 observations. Tenure squared is the only independent variable that appears

to be significant at the 10% level. Also, annual salary seems to be independent of a firm's performance, as return on assets has little impact.

Table 7: Female Regression

Root MSE	0.62496	R-Square	0.0123
Dependent Mean	6.41345	Adj R-Sq	0.0076
Coeff Var	9.74453		

Parameter Estimates						
Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t	Variance Inflation
Intercept	1	8.69059	1.38306	6.28	<.0001	0
GDP	1	-0.00000838	0.00000655	-1.28	0.2008	1.35303
tenure	1	0.08446	0.04524	1.87	0.0620	77.96628
tenuresq	1	-0.01103	0.00385	-2.87	0.0042	26.25481
FertilityRate	1	-1.23384	0.79444	-1.55	0.1205	22.85642
ReturnonAssets	1	0.00180	0.00093977	1.91	0.0562	1.01559
CAO	1	0.00455	0.07489	0.06	0.9516	1.03167
CEO	1	0.06101	0.04962	1.23	0.2190	1.12424
CFO	1	0.04537	0.03558	1.27	0.2024	1.10132
COO	1	-0.02233	0.03919	-0.57	0.5689	1.07336
PRESIDENT	1	-0.02122	0.05465	-0.39	0.6979	1.04564
small	1	-0.01273	0.03102	-0.41	0.6816	1.38467
medium	1	0.01343	0.03045	0.44	0.6591	1.36420

This model is a subset of the previous model; as only female executives are being analyzed. This sample consists of 2,549 observations. Here, fertility rate decreases overall salary by \$1,200, ceteris paribus, like the previous model. With tenure being insignificant, this indicates that annual salary is independent of how long an individual has been an executive. Also, being a COO or president actually decreases overall salary. This is because women who are in these roles are paid less relative to their male counterparts, evident by the preceding literature.

Table 8: Male Regression

Root MSE	0.67433	R-Square	0.0104
Dependent Mean	6.42504	Adj R-Sq	0.0097
Coeff Var	10.49527		

Parameter Estimates						
Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t	Variance Inflation
Intercept	1	9.12575	0.51535	17.71	<.0001	0
GDP	1	-0.00001228	0.00000372	-3.30	0.0010	1.27308
tenure	1	0.03108	0.01397	2.22	0.0261	46.41298
tenuresq	1	-0.00324	0.00110	-2.95	0.0032	20.91502
FertilityRate	1	-1.38253	0.29069	-4.76	<.0001	12.09304
ReturnonAssets	1	-0.00030192	0.00052144	-0.58	0.5626	1.01567
CAO	1	-0.00498	0.06212	-0.08	0.9361	1.01068
CEO	1	0.04416	0.01402	3.15	0.0016	1.23501
CFO	1	0.01152	0.01563	0.74	0.4612	1.14890
COO	1	-0.00161	0.02015	-0.08	0.9365	1.08913
PRESIDENT	1	0.00499	0.02079	0.24	0.8102	1.08976
small	1	0.00825	0.01442	0.57	0.5670	1.24083
medium	1	-0.00098078	0.01203	-0.08	0.9350	1.21375

This sample size contains observations of just male executives with 16,176 observations. Unlike women, working for a firm that is classified as small does not negatively impact overall annual salary, but medium does. Unlike women, the variable president does not have a negative coefficient. This model does not differ greatly from that of the female only model, indicating that men and women are not treated that differently in terms of salary.

Data Subset: Female CFOs

To further examine the characteristics of female executives at top firms, a subset detailing exclusively, Chief Financial Officers, or CFOs was analyzed. For this subset, an ordinary least squares regression was used.

Table 9: All CFOs, Men and Women

Root MSE	0.68473	R-Square	0.0180
Dependent Mean	6.43551	Adj R-Sq	0.0153
Coeff Var	10.63980		

Parameter Estimates						
Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t	Variance Inflation
Intercept	1	9.52085	1.17077	8.13	<.0001	0
GDP	1	7.980422E-7	0.00000834	0.10	0.9237	1.37537
tenure	1	0.09322	0.03327	2.80	0.0051	42.34834
tenuresq	1	-0.01070	0.00274	-3.91	<.0001	17.79273
male	1	0.02695	0.03798	0.71	0.4779	1.07233
FertilityRate	1	-1.76925	0.66165	-2.67	0.0075	11.72158
ReturnonAssets	1	0.00102	0.00125	0.82	0.4149	1.02100
small	1	-0.00608	0.03393	-0.18	0.8578	1.30373
medium	1	-0.03732	0.02899	-1.29	0.1980	1.25482

Here, it is interesting that return on assets is not significant. The goal of a CFO is to maximize that financial indicator, as well as return on equity. It was also expected that the parameter estimate would have a larger impact on overall compensation.

Table 10: Female CFOs

Root MSE	0.60958	R-Square	0.0479
Dependent Mean	6.44282	Adj R-Sq	0.0311
Coeff Var	9.46145		

Parameter Estimates						
Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t	Variance Inflation
Intercept	1	8.22861	3.41892	2.41	0.0166	0
GDP	1	0.00003482	0.00001573	2.21	0.0274	1.29296
tenure	1	0.11286	0.10934	1.03	0.3026	79.10884
tenuresq	1	-0.01432	0.00911	-1.57	0.1171	26.49432
FertilityRate	1	-1.46399	1.96904	-0.74	0.4576	22.89754
ReturnonAssets	1	0.00176	0.00230	0.76	0.4458	1.03546
small	1	0.15775	0.07899	2.00	0.0465	1.52042
medium	1	0.09047	0.07551	1.20	0.2316	1.43884

Out of the 2,950 CFOs, 405 were women. Here, none of the independent variables appear to be significant at the 10% level. Once again, it is surprising that return on assets does not have a larger coefficient, as that is the measure of a firm's financial success. Being a CFO, one would think that return on assets would have a higher impact on annual salary.

Table 11: Male CFOs

Root MSE	0.68473	R-Square	0.0180
Dependent Mean	6.43551	Adj R-Sq	0.0153
Coeff Var	10.63980		

Parameter Estimates						
Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t	Variance Inflation
Intercept	1	9.52085	1.17077	8.13	<.0001	0
GDP	1	7.980422E-7	0.00000834	0.10	0.9237	1.37537
tenure	1	0.09322	0.03327	2.80	0.0051	42.34834
tenuresq	1	-0.01070	0.00274	-3.91	<.0001	17.79273
male	1	0.02695	0.03798	0.71	0.4779	1.07233
FertilityRate	1	-1.76925	0.66165	-2.67	0.0075	11.72158
ReturnonAssets	1	0.00102	0.00125	0.82	0.4149	1.02100
small	1	-0.00608	0.03393	-0.18	0.8578	1.30373
medium	1	-0.03732	0.02899	-1.29	0.1980	1.25482

There are a total of 2,545 male CFOs in the sample. Unlike women, working at a firm that is classified as small or medium ultimately lowers respective salaries. Unlike women, tenure, or the number of years as an executive, is significant for men, evident by the t-statistic. Fertility rate is significant evident by the t-statistic of -2.67.

After this analysis, it is seen that there are no obvious or major discrepancies between male and female executives. But, in terms of relative wages, a higher wage is seen for males in the descriptive statistics. But interestingly, it appears that one is penalized more harshly for being a male CFO than female.

Econometric Testing:

Econometric testing was done to check for multicollinearity, serial correlation, and heteroscedasticity in the various regression models. Muticollinearity occurs when two or more are highly, linearly correlated, ultimately undermining the significance of an explanatory variable. Refer to Table 1 for a discussion about multicollinearity. Serial correlation, or the relationship and/or correlation between a variable and the lagged version of itself, is a violation of classical assumption IV. Heteroscedasticity is the presence of residuals that are not random. This can be worrisome because if it is present, it assumes that an ordinary least squares regression model is no longer the best linear unbiased estimator.

Table 12: Econometric Testing for the Entire Sample (Both genders, all positions)

Test of First and Second Moment Specification		
DF	Chi-Square	Pr > ChiSq
84	125.67	0.0022

Durbin-Watson D	0.904
Number of Observations	18637
1st Order Autocorrelation	0.548

Table 13: Econometric Testing for Females

Test of First and Second Moment Specification		
DF	Chi-Square	Pr > ChiSq
71	85.00	0.1229

Durbin-Watson D	1.390
Number of Observations	2540
1st Order Autocorrelation	0.302

Table 14: Econometric Testing for Males

Test of First and Second Moment Specification		
DF	Chi-Square	Pr > ChiSq
71	102.92	0.0079

Durbin-Watson D	0.924
Number of Observations	16097
1st Order Autocorrelation	0.538

Table 15: Econometric Testing for All CFOs

Test of First and Second Moment Specification		
DF	Chi-Square	Pr > ChiSq
40	56.59	0.0428

Durbin-Watson D	1.309
Number of Observations	2942
1st Order Autocorrelation	0.345

Table 16: Econometric Testing for Female CFOs

Test of First and Second Moment Specification		
DF	Chi-Square	Pr > ChiSq
32	26.44	0.7439

Durbin-Watson D	1.609
Number of Observations	404
1st Order Autocorrelation	0.187

Table 17: Econometric Testing for Male CFOs

Test of First and Second Moment Specification		
DF	Chi-Square	Pr > ChiSq
32	31.26	0.5040

Durbin-Watson D	1.295
Number of Observations	2538
1st Order Autocorrelation	0.352

After identifying that serial correlation and heteroscedasticity were present in some of the models, using SAS, a proc survey reg was used to find clustered robust standard errors because an OLS model was originally used. Then, SAS produced new parameter estimates after correcting for these errors. The Durbin-Watson statistic was used to determine if serial correlation was present, while the chi-squared was used to check for heteroscedasticity. Serial correlation and heteroscedasticity can inflate standard errors. After being corrected, the standard errors did not change dramatically, evident that the cases of these econometric errors present were not very large and impactful.

Table 18: New Parameter Estimates (Both Men and Women, All Executive Positions)

Estimated Regression Coefficients				
Parameter	Estimate	Standard Error	t Value	Pr > t
Intercept	8.6870250	0.53770994	16.16	<.0001
GDP	-0.0000126	0.00000314	-3.99	<.0001
tenure	0.0325944	0.01584907	2.06	0.0398
tenuresq	-0.0039270	0.00113052	-3.47	0.0005
FertilityRate	-1.1412162	0.30945843	-3.69	0.0002
ReturnonAssets	0.0001352	0.00049390	0.27	0.7842
CAO	-0.0081610	0.04995167	-0.16	0.8702
CEO	0.0492033	0.01389457	3.54	0.0004
CFO	0.0176494	0.01512636	1.17	0.2433
COO	-0.0064552	0.01732670	-0.37	0.7095
PRESIDENT	0.0069120	0.01818221	0.38	0.7088
small	0.0015116	0.01285788	0.12	0.9064
medium	0.0010095	0.01082619	0.09	0.9257

The new parameter estimates for the entire sample is above. With a Durbin-Watson statistic of 0.904, serial correlation and heteroscedasticity were present. This corrected estimate is nearly identical to the initial regression output, expect both small and medium have positive signs.

Besides GDP, none of the variables are significant at the 10% level. The standard errors did not change by a large amount.

Table 19: New Parameter Estimates for Women

Estimated Regression Coefficients				
Parameter	Estimate	Standard Error	t Value	Pr > t
Intercept	8.6905942	1.64781211	5.27	<.0001
GDP	-0.0000084	0.00000673	-1.25	0.2129
tenure	0.0844563	0.05453121	1.55	0.1216
tenuresq	-0.0110254	0.00438530	-2.51	0.0120
FertilityRate	-1.2338358	0.95431423	-1.29	0.1962
ReturnonAssets	0.0017953	0.00080684	2.23	0.0262
CAO	0.0045470	0.07104368	0.06	0.9490
CEO	0.0610144	0.04926218	1.24	0.2156
CFO	0.0453665	0.03561588	1.27	0.2029
COO	-0.0223300	0.04050870	-0.55	0.5815
PRESIDENT	-0.0212176	0.04621158	-0.46	0.6462
small	-0.0127283	0.03096850	-0.41	0.6811
medium	0.0134342	0.03117141	0.43	0.6665

With a Durbin-Watson statistic of 1.390, serial correlation is present but heteroscedasticity is not, evident by the chi-squared statistic. Above is coefficient estimates, corrected for the econometric error. This correction is similar to the original parameter estimates for women, as are the standard errors.

Table 20: New Parameter Estimates for Men

Estimated Regression Coefficients				
Parameter	Estimate	Standard Error	t Value	Pr > t
Intercept	9.1257457	0.57822306	15.78	<.0001
GDP	-0.0000123	0.00000373	-3.29	0.0010
tenure	0.0310771	0.01640654	1.89	0.0583
tenuresq	-0.0032438	0.00116686	-2.78	0.0055
FertilityRate	-1.3825268	0.33192675	-4.17	<.0001
ReturnonAssets	-0.0008019	0.00058325	-0.52	0.6047
CAO	-0.0049793	0.06835545	-0.07	0.9419
CEO	0.0441626	0.01457123	3.03	0.0024
CFO	0.0115184	0.01664777	0.69	0.4890
COO	-0.0016059	0.01957712	-0.08	0.9346
PRESIDENT	0.0049934	0.01963966	0.25	0.7993
small	0.0082538	0.01442886	0.57	0.5673
medium	-0.0009808	0.01159442	-0.08	0.9326

In the initial regression, serial correlation and heteroscedasticity were present. The corrected model has nearly the same coefficients as the original ones, with the coefficients impacting salary the same way. The standard errors remain barely unchanged.

Table 21: New Parameter Estimates for All CFOs

Estimated Regression Coefficients				
Parameter	Estimate	Standard Error	t Value	Pr > t
Intercept	9.5175099	1.28553645	7.40	<.0001
GDP	-0.0000002	0.00000769	-0.02	0.9831
tenure	0.0927642	0.03775703	2.46	0.0141
tenuresq	-0.0106908	0.00296283	-3.61	0.0003
FertilityRate	-1.7443295	0.73518260	-2.37	0.0177
ReturnonAssets	0.0010272	0.00115155	0.89	0.3725
small	-0.0083980	0.03259861	-0.26	0.7967
medium	-0.0378488	0.02730747	-1.39	0.1659

The econometric testing indicated that both serial correlation and heteroscedasticity were present. Above are the corrected estimates and standard errors, with minimal change.

Table 22: New Parameter Estimates for Female CFOs

Estimated Regression Coefficients				
Parameter	Estimate	Standard Error	t Value	Pr > t
Intercept	8.2286062	3.30172463	2.49	0.0131
GDP	0.0000348	0.00001425	2.44	0.0150
tenure	0.1128632	0.09609900	1.17	0.2409
tenuresq	-0.0143159	0.00732030	-1.96	0.0512
FertilityRate	-1.4639925	1.89531778	-0.77	0.4403
ReturnonAssets	0.0017567	0.00189152	0.93	0.3536
small	0.1577462	0.07595904	2.08	0.0385
medium	0.0904718	0.07453632	1.21	0.2256

In the original female CFO regression, no serial correlation or heteroscedasticity were evident. Still using the survey reg, the results can be seen above.

Table 23: New Parameter Estimates for Male CFOs

Estimated Regression Coefficients				
Parameter	Estimate	Standard Error	t Value	Pr > t
Intercept	9.8032495	1.38580695	7.07	<.0001
GDP	-0.0000083	0.00000957	-0.87	0.3864
tenure	0.0908659	0.04016229	2.26	0.0238
tenuresq	-0.0104009	0.00315798	-3.29	0.0010
FertilityRate	-1.8130055	0.79022220	-2.29	0.0219
ReturnonAssets	0.0006640	0.00135992	0.49	0.6254
small	-0.0314115	0.03651567	-0.86	0.3898
medium	-0.0545216	0.02960410	-1.84	0.0657

For the male CFO analysis, while there was no serial correlation, heteroscedasticity is present.

When corrected, the estimated independent variables remained the nearly the same.

During this econometric analysis, it was evident that the independent variables fertility rate and tenure appeared to be correlated. Based on economic theory, it was decided to leave both of the variables in the models. If removed, it is possible that this could result in omitted variable bias.

Discussion and Future Implications:

While no overarching statement can be made regarding wages of female executives compared to their male counterparts, there are interesting pieces of anecdotal evidence that can help shed light on to the topic. Specifically, why are there so few female executives when compared to men?

Only 13.6% of this sample were female. And although wages are similar, why is overall relative wages slightly lower for women when compared to men? Then what is the literature referencing about a discrepancy? Top-tier investment firms such as Morgan Stanley, Goldman Sachs, and Vanguard have various women in finance initiatives, as they have even realized there is a gender

gap in pay between men and women. These firms have implemented various programs to address this issue, such as mentorship and sponsorship programs, and have even set goals for increasing the number of women in leadership roles. This suggests that while there is still a gender gap in pay, there is a growing awareness of the issue and a desire to address it.

discrepancy in the industry. Based on the popular press and literature, it is odd that the results are not more dramatic.

One major limitation of this analysis is the presence of unobservable heterogeneity, or the presence of various factors that are not measurable. This includes personal habits such as work ethic, personality, and grit. There is also a great amount of omitted variables that would have made this analysis more exact, including marital status, number of children, and education level. After many discussions with both male and female professionals in the finance industry, one common, anecdotal theme was recognized. Women are more disciplined in the risks that they take, while male are more impatient, impulsive, and reactive when it comes to trading and market performance.

While salaries do not differ greatly, there is still a paucity of women in executive roles. Based on this analysis, we are unsure if women are not in these roles due to personal choice or due to employer preference. The environmental feel of a company is also extremely important in the hiring and retention of both men and women.

Similarly, the data set is flawed. There is an absence of key indicators, which was a primary constraint in the analysis. For example, tenure was a created variable using the executives current age and the year they became an executive at their respective firm. This proxy is not the same as the number of years the individual was an executive.

While completing this analysis, observations were made regarding the type of firm in which a woman is employed. Women tend to hold titles such as CEO, CFO, CAO, and COO at firms with weaker financial statements compared to men; that is, lower return on asset ratio and lower net sales. Women were also employed at firms that had recently declared bankruptcy, evident by leadership changes at General Motors. This may lead one to consider whether women are chosen to lead a company when the firm is in the red and struggling? Are women a last ditch effort for companies? More executive roles for women are noticeable at firms that fall into the consumer staples sector, such as household products and food and beverage. In addition to consumer staples, retail establishments that are marketed towards females have a female C-suite team, including but not limited to Ulta Beauty, Vera Bradley, and Bed Bath and Beyond.

While this issue is not solvable and no dramatic conclusions can be drawn, this is just the beginning of this conversation. While this study used 11 independent variables to describe annual salary, there are indeed many more, which are unmeasurable without numerical values. It appears that women are not penalized because of their gender in terms of wages, but males the number of males' present is overwhelmingly disproportional. It is also curious how funds exclusively managed by women outperform their male counterparts by 100 basis points in regards to annual returns. (Sargis & Wing). If women are successful in this field, even more so than men, is why is the matriculation rate into finance so low? Perhaps it is due to the notoriously scarce work-life balance present in the investment industry.

While there is no one solution, perhaps a multifaceted approach holds the most chance of success in improving the standing of and subsequent members of female executives. Over time,

hopefully women are encouraged to enter this rigorous field leading to increased profitability for all.

Appendix:

The Chartered Financial Analyst (CFA) designation is globally recognized and given to qualified candidates from the CFA Institute. Candidates for the CFA designation are required to pass three levels of exams sequentially, with each exam offered annually. It is recommended by the CFA Institute that a candidate should study for 300 hours per exam to receive a passing score. These exams cover topics including economics, ethics, financial reporting and analysis, fixed income, corporate finance, equity investments, derivatives, and portfolio management. Each exam has a pass rate that hovers around 40%, with only approximately 10% of individuals who begin the program with the Level I exam continue to obtain the designation. As per the CFA Institute, this designation is considered the “gold standard” of the investment and finance industry. Common professions for Charterholders include portfolio managers, investment officers, and research analysts. Approximately 15% of Charterholders worldwide are women.

Annually, the CFA Institute surveys current Charterholders about their careers, marital status, and perspectives about the investment industry. Some responses from this survey are below.

Figure A:

Marital Status of CFA holders:

	Female (number)	Female (%)	Male (number)	Male (%)	Total (number)	Total (%)
Married or married-like	740	71.7	3,160	79.4	3,900	77.8

relationship						
Widowed	6	0.6	11	0.3	17	0.3
Divorced	66	6.4	98	2.5	164	3.3
Separated	9	0.9	33	0.8	42	0.8
Never married	211	20.4	680	17.1	891	17.8
Total	1,032	100.0	3,982	100.0	5,014	100.0

Figure B:

If a CFA holder indicated they are married or in a marriage-like relationship, their spouse:

	Female (number)	Female (%)	Male (number)	Male (%)	Total (number)	Total (%)
Spouse has a full-time occupation	562	79.0	1,540	50.7	2,102	56.1
Spouse has a part-time occupation	49	6.9	488	16.1	537	14.3
Spouse's	55	7.7	899	29.6	954	25.5

primary work involves taking care of our home/family						
None of the above	45	6.3	109	3.6	154	4.1
Total	711	100.0	3,036	100.0	3,747	100.0

It is interesting to note that 79% of women who have elite finance jobs have spouses that work full-time compared to 51% of men that have spouses that work full time. This is also noticeable in childcare responsibilities. Reference Figure 7.

Figure C:

What proportion of the duties related to childcare is your responsibility?

	Female (number)	Female (%)	Male (number)	Male (%)	Total (number)	Total (%)
0-10%	17	3.4	139	6.1	156	5.6
11-20%	27	5.4	314	13.8	341	12.3
21-30%	27	5.4	454	19.9	481	17.3

31-40%	31	6.4	346	15.2	377	13.6
41-50%	68	13.7	519	22.7	587	21.1
51-60%	102	20.5	148	6.5	250	9.0
61-70%	54	10.9	55	2.4	109	3.9
71-80%	77	15.5	47	2.1	124	4.5
81-90%	42	8.5	30	1.3	72	2.6
91-100%	52	10.5	230	10.1	282	10.1
Total	497	100.0	2,282	100.0	2,779	100.0

Figure D:

How many children live with you?

	Female (number)	Female (%)	Male (number)	Male (%)	Total (number)	Total (%)
0	579	56.0	1,873	46.8	2,452	48.7
1	175	16.9	693	17.3	868	17.2
2	223	21.6	996	24.9	1,219	24.2
3	49	4.7	352	8.8	401	8.0

4	5	0.5	66	1.6	71	1.4
5	2	0.2	11	0.3	13	0.3
6	-	0.0	6	0.1	6	0.1
7	-	0.0	1	0.0	1	0.0
More than 8	1	0.1	3	0.1	4	0.1
Total	1,034	100.0	4,001	100.0	5,035	100.0

Figure E:

CFA holders were asked about their point of view regarding industry diversification. Responses were as follows:

	Female (number)	Female (%)	Male (number)	Male (%)	Total (number)	Total (%)
Believe mixed gendered teams lead to better investment performance results because of diverse	648	69.5	1,569	42.5	2,217	47.9

viewpoints						
Do not believe mixed gendered teams lead to better investment performance results, but prefer to work for a firm whose corporate culture is supportive of gender diversity	177	19.0	1,142	30.9	1,319	28.5
Gender diversity does not matter when it comes to managing investments	107	11.5	984	26.6	1,091	23.6
Total	932	100.0	3,695	100.0	4,627	100.0

References

- Adams, R. B. (2016, August 23). Family, Values, and Women in Finance. Retrieved March 11, 2020, from gsm.ucdavis.edu/post/why-so-few-women-finance.
- Adamy, J., & Overberg, P. (2016, May 17). Women in Elite Jobs Face Stubborn Pay Gap. <https://www.wsj.com/articles/women-in-elite-jobs-face-stubborn-pay-gap-1463502938>
- Baker, M., & Milligan, K. (2008, October). How Does Job-Protected Maternity Leave Affect Mothers' Employment? *University of Chicago Press Journals*, 655-691. Retrieved February 24, 2020, from <http://www.jstor.org/stable/10.1086/591955>
- Bertrand, M., Hallock, K. F. (2001, October) *The Gender Gap in Top Corporate Jobs*. Retrieved, February 22, 2019, from Sage Publications: <https://www.jstor.org/stable/2696183>
- Blair-Loy, M., & Wharton, A. S. (2004, November). *Mothers in Finance: Surviving and Thriving*. Retrieved February 23, 2019, from American Academy of Political and Social Science.
- Cannivet, Michael. "Why Women Are Better At Investing." *Forbes*, Forbes Magazine, 30 Dec. 2018, <https://www.forbes.com/sites/michaelcannivet/2018/12/29/why-women-are-better-at-investing/#4fe791396f37>.
- Ciancio, A. (2019, January 2019). *More Women Lead, Yet Still Lag*. Retrieved from Global Finance: <https://www.gfmag.com/magazine/january-2019/more-women-lead-yet-still-lag>
- Eckel, C. C., & Füllbrunn, S. C. (2015, February). Thar SHE Blows? Gender, Competition, and Bubbles in Experimental Asset Markets. *The American Economic Review*, 906-920. Retrieved, February 22, 2020, from <http://www.jstor.org/stable/43495403>
- Fuhrmans, Vanessa. "Where Women Fall Behind at Work: The First Step Into Management." *The Wall Street Journal*, Dow Jones & Company, 15 Oct. 2019, <https://www.wsj.com/articles/where-women-fall-behind-at-work-the-first-step-into-management-11571112361?mod=searchresults&page=1&pos=11>
- Gneezy, U., Niederle, M., & Rustichini, A. (2003, August). Performance in Competitive Environments: Gender Differences. *Oxford University Press*, 1049-1074. Retrieved February 24, 2020
- Madden, Janice Fanning. "Performance-Support Bias And The Gender Pay Gap Among Stockbrokers." *Gender and Society*, vol. 26, no. 3, 2012, pp. 488-518. *JSTOR*, www.jstor.org/stable/23212272.
- Ritholtz, B. (2016, February 24). Where Are the Women in Finance? <https://ritholtz.com/2016/02/why-are-there-so-few-women-in-finance/>

“A WOMAN’S WORTH: Gender Differences in Compensation.” *Selling Women Short: Gender and Money on Wall Street*, by Louise Marie Roth, Princeton University Press, PRINCETON; OXFORD, 2006, pp. 58–70. *JSTOR*, www.jstor.org/stable/j.ctt7rz99.7.

Roth, Louise Marie. “Engendering Inequality: Processes of Sex-Segregation on Wall Street.” *Sociological Forum*, vol. 19, no. 2, 2004, pp. 203–228. *JSTOR*, www.jstor.org/stable/4148795.

Sargis, Madison, and Kathryn Wing. “Female Fund Manager Performance: What Does Gender Have to Do With It? - Morningstar Blog.” *Morningstar*, 8 Mar. 2018, <https://www.morningstar.com/blog/2018/03/08/female-fund-managers.html>.

US Bureau of Labor Statistics. (2015). 25 Most common occupations for full-time workers by sex and number of workers. https://www.dol.gov/wb/stats/most_common_occupations_for_women.htm

“Women in the Workplace 2019.” *NEW REPORT: Women in the Workplace 2019*, McKinsey & Company, Oct. 2019, https://womenintheworkplace.com/?mod=article_inline.

Zillman, Claire. “The Fortune 500 Has More Female CEOs Than Ever Before.” *Fortune*, Fortune, 16 May 2019, <https://fortune.com/2019/05/16/fortune-500-female-ceos/>.