# THE PENNSYLVANIA STATE UNIVERSITY SCHREYER HONORS COLLEGE 

## DEPARTMENT OF ECONOMICS

# THE ECONOMIC IMPACT OF THE WAVES OF FEMINISM ON WOMEN IN HIGH LEVEL CORPORATE POSITIONS 

SANGEETHA KANNAN<br>SPRING 2019

A thesis<br>submitted in partial fulfillment of the requirements for baccalaureate degrees in Economics and Finance with honors in Economics

Reviewed and approved* by the following:
Michael Gechter
Assistant Professor of Economics
Thesis Supervisor
Russell Chuderewicz
Teaching Professor of Economics
Honors Adviser

* Signatures are on file in the Schreyer Honors College.


#### Abstract

This paper analyzes the possible impact of the second and third wave of feminism on the numbers of women attaining high level corporate positions such as board or C-suite positions. In this paper, I hypothesize that the three waves of feminism that occurred during the time period of 1848 to 2011 have had some impact on women getting higher level positions and closing the income inequality gap between men and women. These movements had primarily social goals, so the economic impact they had is more indirect. This analysis is to measure the efficacy of these feminist movements in achieving equality for women in the corporate world. I use statistical analyses to observe any possible impact that feminist movements could have on women in high ranking corporate positions. Interaction variables were constructed in order to observe how the impact of two variables together could have affected my results. My results show an association between the proportion of women with high incomes increasing as some of these feminist movements take effect.


## TABLE OF CONTENTS

LIST OF FIGURES ..... iii
LIST OF TABLES ..... iv
ACKNOWLEDGEMENTS ..... v
Chapter 1 Introduction ..... 1
Chapter 2 Background of the Three Waves of Feminism ..... 2
Chapter 3 Underrepresentation of Women as CEOs Now ..... 6
Data on Women Leaders ..... 9
Chapter 4 Why the Gap Exists: ..... 10
Chapter 5 Methodology ..... 12
Chapter 6 Model and Results ..... 16
Chapter 7 Conclusion ..... 30
BIBLIOGRAPHY ..... 31

## LIST OF FIGURES

Figure 1: Proportion of Well Off Individuals 1962-2011...................................................... 16
Figure 2: Educational Attainment for Men and Women 1963-2011 ...................................... 21
Figure 3: LPR for Men and Women 1962-2011................................................................... 25

## LIST OF TABLES

Table 1: Regression Results with Wave 2 and Wave 3- Men ..... 17
Table 2: Regression Results with Wave 2 and Wave 3- Women ..... 18
Table 3: Regression Results with Wave 2- Men ..... 18
Table 4: Regression Results with Wave 2- Women ..... 19
Table 5: Regression Results with Wave 3- Women ..... 19
Table 6: Regression Results with Wave 3- Men ..... 20
Table 7: Regression Results with Wave 2 and Wave 3- Men ..... 21
Table 8: Regression Results with Wave 2 and Wave 3- Women ..... 22
Table 9: Regression Results with Wave 2- Men ..... 22
Table 10: Regression Results with Wave 2- Women ..... 22
Table 11: Regression Results for Wave 3. ..... 23
Table 12: Regression Results with Wave 3- Women ..... 23
Table 13: Regression Results with Wave 3- Men ..... 24
Table 14: Regression Results with Wave 2 and Wave 3- Men ..... 26
Table 15: Regression Results with Wave 2 and Wave 3- Women ..... 26
Table 16: Regression Results with Wave 2- Men ..... 27
Table 17: Regression Results with Wave 2- Women ..... 27
Table 18: Regression Results with Wave 3- Women ..... 27
Table 19: Regression Results with Wave 3- Men ..... 28

## ACKNOWLEDGEMENTS

I would like to first and foremost thank Professor Michael Gechter for supervising my thesis and helping me craft this paper. I would also like to thank Professor James Tybout for the guidance he provided all honors Economics students as we went through the thesis writing process. Finally, I would like to thank all of my fellow scholars who supported me through this process.

## Chapter 1

## Introduction

High level corporate jobs involve some of the greatest gender imbalances, but it appears that over time, this difference has been shrinking. In order to see the causal effect that feminist movements had on the number of women gaining high level corporate jobs, it is important to understand the three main waves of feminism throughout history and the social impact they had on the female population. In addition to analyzing literature on the three waves, this section will also examine the existing literature on the current underrepresentation of women in CEO positions.

The data used for this analysis comes from the Census Bureau and is largely survey data. I start with a history of the three waves of feminism, their goals, and their social impacts. I then review the existing literature on how the role of women in the corporate management role has changed over the years. Following that section, I discuss the methodology I used to conduct my analysis, including any limitations. Finally, I present the results I found and comment on the implications of my results of the future of feminist movements.

So, this begs the question, if it is due largely to image, have feminist movements changed the image of the woman enough to gain the acceptance of the corporate field? And if not, do feminist movements have the potential to do so?

## Chapter 2

## Background of the Three Waves of Feminism

## First Wave:

The first wave of feminism started in 1848 with the Seneca Falls Convention. The central issues that this wave of feminism was to address included voting rights, education, and women entering the workplace. It was also a result of urban industrialism since this brought prospects of more women joining the workforce. At this time, the movement did not stand on its own, since it was often intertwined with the abolitionist and temperance movements at the time. During this time, middle class white women came to the realization that if they were ever going to make any societal change, they had to gain the right to vote, so this became the primary goal of the first wave. The first wave of feminism brought together women of all political interests from very conservative to the far left, however it only focused on middle class white heterosexual women (Krolokke, C., \& Sorenson, A. S., 2005). This wave was one of the most difficult to mobilize since it required women to challenge deep seeded and baseless notions such as the idea that women have smaller brains as a result of their smaller physique. Breaking out of the cult of domesticity, an opinion that asserted that women should not do work outside of the household, was another major obstacle that the women of this time had to face. Without these breakthroughs, even the prospect of women joining the workforce let alone high level corporate jobs would have been almost impossible (Bystrom, 2016). 4 This movement resulted in many women entering professional jobs rather than domestic or factory work. Elizabeth Black was the first woman to earn a medical degree during this time period in 1849 and Arabella Mansfield was the first woman to become a practicing attorney in 1869. Many other victories of this wave
included higher admittance to professional jobs, the right to vote with the 19th amendment, and the allowance to get higher education (Caughie, 2010).

## Second Wave:

This wave of feminism, which took place during the 1960s and the 1970s, was thought to have occurred for a few reasons. One of the reasons was that it was a reaction to the first wave. Although the first wave did have many victories, it did not succeed in creating a group identity amongst all feminists (Caughie, 2010). It also was not very diverse since almost every marginalized group was excluded from the first wave of feminism (Maxwell, A., \& Shields, T, 2018). The second wave was much more radical than the first wave of feminism since it was thought that progress was not happening fast enough and that more radical views needed to be taken in order to achieve true equality. In addition, during the 1960s and the 1970s, feminists were fighting for the spotlight against the civil rights movement and anti-war movements, making the feminist movement somewhat irrelevant during that time period. Women as a result took more radical views in order to draw the attention of the public. One of their main targets was beauty pageants which were viewed as a form of oppression. Feminists of this era aimed to have a woman's worth determined not by their looks but rather by what they were able to accomplish. Because of this, the second wave focused more on sexual freedom and redefining female sexuality. Even though one of the primary goals was to create a uniform identity among all feminists, clear factions started to emerge. The liberal feminists were focused on women achieving equality through their own individual actions and choices. The socialist/Marxist feminists rooted their philosophies in Freudian theory and psychoanalysis. They also believed that in order for women to gain equality, the institution of capitalism was to be replaced with socialism. Because the movement ended up producing segments of feminists trying to achieve
different goals, these contradictions made the wave less effective than it should have been. For instance, Judith Stacey in 1987 wanted this movement to gain publicity and then the following decades would be focused on women making personal lifestyle choices in order to incorporate feminism in their everyday lives. Stacey had no intention of creating a body of women to fight against sexist institutions or to make big social changes, a primary goal of many other feminists of her time. With so many points of view emerging during this time, the feminist movement lacked cohesion which made it difficult for it to make any significant progress (Mann, S. A., \& Huffman, D. J., 2005).

## Third Wave:

The third wave of feminism is viewed as a reaction to everything that the second wave got wrong and it took place from the late 1980s through the 1990s. In addition to being reactionary to the previous movement, the third wave was also a reaction to the increased globalization after the fall of communism. Once the iron curtain fell, the world became more connected than ever, and news of how different cultures handled feminism quickly spread. American feminists were horrified at the fact that practices such as genetic mutilation and the systematic oppression of Muslim women were normalized, so this added more fuel to this wave. The primary goal of third wave feminism was to create a single base including women of all ages and races. Feminists wanted to create a body that could lobby for the economic, social, and political interests of all women. The emphasis went back to cultural feminism from academic feminism. They found that academic feminism was only beneficial to those who attended high institutions and was therefore exclusive to educated women. This movement has been fueled by incorporating younger women into the movement as well so it kicked off with a very rebellious and almost aggressive tone. It started with reclaiming the word "girl" and rebranding it to "grrl".

There are a few explanations for this but the most common is that the word is characterized with a growl sound "grr", which is meant to be empowering. Reclaiming a lot of terms that have been used derogatorily was another goal of the third wave of feminism. It had been thought that language was a tool used to oppress women so by desensitizing the population to these terms, they were taking power away from the patriarchy. Technology played an increasingly important role as well because it helped to reach a wider audience. it also helped in creating a uniform message that was not construed by word of mouth or biases of the people transmitting these views (Krolokke, C., \& Sorenson, A. S., 2005). Some of the accomplishments of this movement include many organizations that are very influential now including the National Organization of Women and the Abortion Rights Action League. There was also a record high when it came to women enrolling in undergraduate and graduate institutions. In fact, in the 1990s, women outnumbered men in the enrollment at higher level institutions. However, even with these record high numbers of women enrolling in institutions, the number of women receiving doctorates over the period of 1970s to 1990 increased by only 3 percent (Orr, 1997).

## Fourth Wave?

Whether or not we have entered into a fourth wave of feminism is disputed, however a new generation of feminists are gearing up for a worldwide movement through "internet feminism".

## Chapter 3

## Underrepresentation of Women as CEOs Now

Chief executive officers are considered to be the primary decision makers when it comes to any concerns with the economic activity of the company. Historically, being the CEO has been considered to be prestigious since it is the highest-ranking position within a company. Women have been consistently underrepresented in high ranking corporate positions, specifically that of the CEO. The persisting gender wage gap can in part even be attributed to the fact that women do not occupy high positions such as CEO or chairperson of board positions. This underrepresentation was measured by a study by Bertrand and Hallock in 2001. This study looked at the five highest paid executives per company in the S\&P 1500 from 1992-1997, and they found that only $2.5 \%$ of those executives were female. Another study looked at a longer time period from 1992-2004 and saw that during this time, the number of female CEOs increased from 4 to 34. This still represented only $1.3 \%$ of all CEOs at the time. Interestingly enough, even though the number of female CEOs has not been increasing as much as previously expected, the number of women in leadership positions in general rose from 18\% in 1972 (U.S. Bureau of Labor Statistics, 1982) to $45 \%$ in 2000 (U.S. Bureau of Labor Statistics, 2001), so this stagnation appears to be contained to high ranking corporate positions.

After conducting a study, Powell and Butterfield concluded that the number of women in executive positions was "dramatically small", indicating that there were some other factors responsible for this underrepresentation, leading to the idea of a glass ceiling, or some unseen force that was prohibiting women from holding high ranking corporate positions. Few
explanations for this have been proposed: one is that over the last thirty years, women have just now been getting their MBAs and that there is a lag in the number of women becoming CEOs as a result. However, given the fact that the number of female CEOs has been somewhat 12 stagnant indicates that there must be some other factors limiting the number of female CEOs. Another proposed explanation is that females are widely discriminated specifically in the financial sector. Since many companies are financial in nature such as banks and hedge funds, there is severe underrepresentation in these sectors specifically reflecting a very low percentage of women CEOs. In other words, it is not necessarily true that the underrepresentation is uniform across all sectors; abnormally high levels of discrimination could be occurring only in select sectors. One of the most surprising explanations is that the market itself is biased against women as CEOs. In a 2006 study by Wolfers, it was found that stock returns plummeted by about $3 \%$ on average when companies announced that they had appointed female CEOs compared to a $.5 \%$ decrease on average of stock returns when male CEOs were appointed. It appears that the market expectations of the ability of women to properly lead a company is significantly worse than for those of men. The same study found that even years after appointment, stock returns for companies run by women continued to be lower on average, although whether or not this was due to the performance of women as leaders is not confirmed. To explain this distrust of women leaders in the stock market, a study performed by Kanter (1977) attempts to explain it with token status theory. The idea behind token status theory is that if someone of a demographic that is not common is introduced to a high-level position that required a great deal of trust, people are often skeptical to put them in those positions. For decades, men have dominated high level corporate positions so for women to start taking over these positions, it results in women being considered tokens. This leads to unfair gender stereotyping and biases that are specific to women. In the
same study, it was found that some observers' biases were so strong that they actually distorted female leaders to fit their preconceived notions about women. So according to the token status theory, as more women enter high level corporate positions, it should become more normalized and men and women will be seen as equals (Bertrand, 2009). Finally, one of the most prevalent explanations for the underrepresentation of women as CEOs is because of the expectation that their time is split between work and caring for a family. A study conducted in 2008 indicates that the primary factor affecting the wage gap is the fact that women with children cannot commit to working as many hours as men. They did find that women without children were able to work just as many hours as men, but they constitute a minority of older women. Women with families often must take work leave or work fewer hours per week, which results in salary penalties. When looking at men with families, there was no correlation between having a family and hours worked per week. The belief that working as many hours as possible is necessary to hold high level corporate positions with the fact that this may not be a reality for many women could explain why women are so heavily underrepresented in C-suite positions. However, it is still unclear whether the underrepresentation is wholly due to this factor or whether even the expectation that women will not fully commit to their jobs affects their representation. Further psychological studies suggest that people create models of the ideal person to hold certain jobs, and since historically, that ideal has been men for CEO positions, women violate that ideal. Since men are considered to innately have the qualities to make them good leaders, it appears that this trust in men to properly lead organizations is due largely to their image (Lee, P. M., \& James, E. H., 2007).

## Data on Women Leaders

The Pew Research Center has also compiled data on the trends of women in high ranking political and corporate positions. From 1995-2010, there appears to be a steady increase in the percentage of Forbes 500 CEOs who are women. After 2010, there is some fluctuation year to year. The increase goes from $0 \%$ to $3 \%$ and reaches an all-time high in 2017 at $6.4 \%$. While the Forbes 500 CEOs give a decent sized sample, it tends to be too narrow for the purposes of gauging the overall effect on women in high level corporate positions. The same study looked at the number of women who were Fortune 500 board members during the time period of 19952017. Every year saw a steady increase in the proportion of boards that were comprised of women, reaching a peak of $22.2 \%$ ("The Data on Women Leaders"). There is no doubt that there has been progress when it comes to women in high ranking corporate positions, but two questions still stand to be answered: what has caused this progress in the first place and why has it not achieved complete equality between men and women? Even though there has been an undeniable steady increase, the proportion of women holding these positions is still significantly less than half.

## Chapter 4

## Why the Gap Exists:

Before looking at the impact that feminist movements have on women in high ranking positions, it is worth exploring some of the literature on why the gap exists in the first place. Looking into why the gap exists could help with an understanding of whether or not feminist movements have an effect. Looking at the possible causes of increases of women in these positions may lead to a connection between feminist movements and the causes of the increases in women in the occupations of interest. The idea that women are systematically disallowed from attaining these high level corporate positions is referred to as the glass ceiling. As of 2017, the Fortune 500 companies show that women hold 19.9 percent of board positions and 5.8 percent of CEO positions. In a working paper, Marianne Bertrand found the share of women in the 90th percentile of the earnings distribution to be increasing every decade from 1970-2010, which are the decades spanning the second and third wave of feminism. The lack of women in high level corporate positions could be attributed to a difference in education levels. It is true that the rate of higher education of women starting in the 1960s surpassed that of men until the 1970s. However, Bertrand draws attention to the fact that even though the number of women getting degrees is higher than that of men, the types of 16 degrees they are getting is very different. Men tend to get degrees such as MBAs and other Masters degrees that lead to professions with greater earnings. Another noted cause is the general mentality of women when faced with a job with potentially high returns but high risk such as high level corporate positions. In general, women
tend to be more risk averse, resulting in them avoiding jobs that are lucrative enough to have high earnings since according to a study by Dohmen et al. (2011), jobs that are very lucrative tend to be volatile in terms of earnings (Bertrand, 2018).

## Chapter 5

## Methodology

## Income Analysis:

To measure the impact of the waves on feminism on the numbers of women attaining high level positions, I used the number of women in the top 10 percent of the income distribution. More women entering the market for corporate positions are most likely getting paid in the top decile of the income distribution, so this value can help to estimate the impact on women attaining high ranking jobs. I also measured the number of men in the top 10 percent of the income distribution to eliminate the possibility of some exogenous factor causing any changes in the proportion of women in this income bracket. Due to constraints on the availability of data from 1848-1920, it was not possible to track the effects of the first wave of feminism. With the data available, this report will focus on the second and third wave of feminism and their impact on women in the labor market. In addition, the first wave was primarily focused on women's suffrage, so any impact on women during that time period attaining high ranking corporate positions would be unlikely.

## Definition of "Well Off"

Due to inflation over the years, I adjusted each year's income to the income considered to be "well off" in 1965. I found that in 1965, at an income of $\$ 25,000$ in both men and women, the proportion of earners who earned more than $\$ 25,000$ was less than $10 \%$. To adjust for inflation over the years, I calculated the inflation rate to adjust income levels to using the consumer price indices (Consumer Price Index Data from 1913 to 2019). After adjusting the \$25,000 in 1965 for
each year, I found the proportion of those surveyed that attained an income higher than that level which for all years I deemed to be considered "well off". Figure 1 in the appendix shows the adjusted incomes that reflect "well off" individuals over the time period of 1965-2011.

## Educational Attainment Analysis:

It is very common for individuals in leadership positions in the business world to have graduate degrees, so looking at the changes in educational attainment could shed some light on whether feminist movements lead to an increase in education. For this analysis, I individuals went on to had at least one graduate degree so looking at this data could shed some light on whether the waves of feminism impacted the educational attainment of women who in turn took C-suite or board member positions.

For this portion of the analysis, I used data on the numbers of men and women who were "highly educated". I defined "highly educated" as anyone got 5 or more years of schooling in an undergraduate/graduate institution. This indicates at least one year of graduate school, at which point that individual can be considered to be educated enough to be likely to get a high ranking corporate position.

## Labor Participation Analysis:

I included data on labor participation rates as well in this analysis to observe any changes in general labor participation as opposed to high income and highly educated individuals. This could provide some insight into whether middle/lower income earning women saw any impact from these movements. Due to some data inconsistencies, I omitted the data from the first three years.

## Data Source:

The data for this analysis was drawn from the Integrated Public Use Microdata Series (IPUMS) which provided me with census data. Specifically, I relied on survey data from the Current Population Survey compiled by IPUMS. I found the total personal income with the added variable of gender over the time period of 1965-2010. This time period was chosen because it encompasses the beginning of the second wave of feminism to the end of the third wave. Any impact that the waves had on the upper income earners of the labor market would be captured within that time period. I used data on both men and women to account for any changes in the general economy other than feminist movements that could have caused any changes in the proportion of high income women. If a change in these proportions were mirrored in the data on men, it is possible that the feminist movement was not responsible for that change.

## Limitations:

One of the limitations of this analysis is due to the nature of the data I used. With survey data, it is not possible to get a complete census since many will choose not to fill the survey out, leaving out many data points from my analysis. In addition, I found that the number of observations from year to year was very irregular. A lack in consistency in the number of people who filled the survey out could impact the overall results. Also, due to the fact that I used survey data, it is possible that the survey takers were not truthful in their responses which could impact my results as well.

Along with analyzing income data to measure the impact of the waves of feminism on the number of women falling in the top $10 \%$ of the income distribution, I also analyzed the educational attainment of men and women over the time period of 1965-2010. Most high ranking corporate position holders had at least one graduate degree so looking at this data could shed
some light on whether the waves of feminism impacted the educational attainment of women who in turn took C-suite or board member positions. For this portion of the analysis, I used census data drawn from the United States Census Bureau. I looked at the proportion of men and women completing five or more years of higher education, which would indicate some sort of graduate study.

Although occupational data was available and could provide information on men and women in c- suite and board positions, there were large gaps in the data which made it unusable. As a result, I decided to use data on individuals who I classified as high earning and highly educated to serve as a proxy for men/women in high ranking corporate positions.

I used five years as a threshold for highly educated however it is possible that certain individuals attended undergrad for five years so for those individuals, the survey data may misrepresent "highly educated".

## Chapter 6

## Model and Results

Models:
percentofwomen $=\boldsymbol{\beta}($ year $)+\boldsymbol{\beta}($ yearXwave 2$)+\boldsymbol{\beta}($ yearXwave 3$)+\boldsymbol{\beta}($ yearXfemale $)$
percentofmen $=\boldsymbol{\beta}($ year $)+\boldsymbol{\beta}($ yearXwave 2$)+\boldsymbol{\beta}($ yearXwave 3$)+\boldsymbol{\beta}($ yearXfemale $)$
To run my regressions, I created interaction variables for the year and both wave 2 and wave 3. In addition, I also created an interaction variable between the year and the gender of the individual which I labeled "yearXfemale". I ran these regressions as a whole but also ran them by dropping one of the interaction variables to isolate the causal effect.

Analysis for Income Data:


Figure 1: Proportion of Well Off Individuals 1962-2011

The first vertical line represents the beginning of the effects of the second wave of feminism, and the second line represents the beginning of the effects of the third wave. The preliminary results when looking at the time period of 1965 to 1981 which are the rough start and finish dates for the second wave of feminism show that there was an increase in proportion of women considered "well off". The same trend is evident when looking at the time period of 1992 to 2011. There are large fluctuations in the proportion of men with a well-off income over time however, indicating that the results from regressions may be more irregular for men.

Looking at the start and finish of both the waves, the overall change in the proportion of men and women with well-off incomes can be observed. For men, the overall change for the second wave and third wave respectively are 0.008318 and 0.010658 . For women, the overall changes for the second and third wave in well-off income earners is 0.001387 and -0.006123 respectively.

Table 1: Regression Results with Wave 2 and Wave 3- Men

|  | Coefficient | P-value |
| :--- | :--- | :--- |
| year | .0000902 | 0.196 |
| yearXwave2 | $4.27 \mathrm{e}-07$ | 0.836 |
| yearXwave3 | $5.89 \mathrm{e}-06$ | 0.000 |

Table 2: Regression Results with Wave 2 and Wave 3- Women

|  | Coefficient | P-value |
| :--- | :--- | :--- |
| year | .0000519 | 0.000 |
| yearXwave2 | $-4.07 \mathrm{e}-.07$ | 0.195 |
| yearXwave3 | $9.94 \mathrm{e}-06$ | 0.000 |

To test the significance level, I used a $95 \%$ confidence level. The results for the proportion of men who are considered "well off" show that the only statistically significant variable was the interaction variable between time and when the third wave of feminism took effect. However, the results for the proportion of women who are considered well off showed that the coefficients for year and yearXwave3 were significant.

Table 3: Regression Results with Wave 2- Men

|  | Coefficient | P-value |
| :--- | :--- | :--- |
| year | .0004198 | 0.000 |
| yearXwave2 | $-2.51 \mathrm{e}-07$ | 0.345 |


|  | Coefficient | P-value |
| :--- | :--- | :--- |
| year | .0001076 | 0.000 |
| yearXwave2 | $-7.6 \mathrm{e}-07$ | 0.0 .76 |

Table 4: Regression Results with Wave 2- Women

The regression results of just the second wave of feminism and the proportions of men and women with incomes considered "well off" show that in both cases, the interaction variable of time and the second wave are insignificant, while the coefficient for the year is significant.

Table 5: Regression Results with Wave 3- Women

|  | Coefficient | P-value |
| :--- | :--- | :--- |
| year | .000126656 | 0.000 |
| yearXwave3 | $1.03 \mathrm{e}-06$ | 0.000 |

Table 6: Regression Results with Wave 3- Men

|  | Coefficient | P-value |
| :--- | :--- | :--- |
| year | .0000858 | 0.191 |
| yearXwave3 | $5.92 \mathrm{e}-06$ | 0.000 |

The regression between the proportion of men/women who are considered well off against the year and yearXwave3 provides information on the impact of the third wave isolated from the second wave on high income earners. Both the variables for women were statistically significant while the only variable that was statistically significant for men was the interaction variable yearXwave3.

## Results from Income Analysis:

The results show that the impact of the second wave of feminism had on men and women being high income earners was insignificant since every coefficient involving the second wave was statistically insignificant. However, there does appear to be an impact of the third wave on the proportion of high earning women. More notably, the coefficient of yearXwave3 for the time series regression with both interaction variables is greater for women than for men, indicating that the third wave of feminism likely had an impact on the number of women earning a high income.

## Educational Attainment Analysis:

Figure 2: Educational Attainment for Men and Women 1963-2011


For men, the overall change in educational attainment for the second wave and third wave respectively are 0.056696 and -0.012859 . For women, the overall changes in educational attainment for the second and third wave in well-off income earners is 0.049782 and 0.021013 respectively.

Table 7: Regression Results with Wave 2 and Wave 3- Men

|  | Coefficient | P-value |
| :--- | :--- | :--- |
| year | .0017014 | 0.000 |
| yearXwave2 | $4.71 \mathrm{e}-06$ | 0.400 |
| yearXwave3 | -.0000178 | 0.000 |

Table 8: Regression Results with Wave 2 and Wave 3- Women

|  | Coefficient | P-value |
| :--- | :--- | :--- |
| year | .002124 | 0.000 |
| yearXwave2 | $-1.67 \mathrm{e}-06$ | 0.709 |
| yearXwave3 | -.0000126 | 0.000 |

Similar to my previous analysis of high income earners, I used a significance level of $95 \%$ to assess the significance of my variables. Once again, the coefficients interacting year and the second wave of feminism do not yield significant variables. Both yearXwave3 variables yielded slightly negative coefficients which would be consistent with the steep decline that occurred from 1985-1992.

Table 9: Regression Results with Wave 2- Men

|  | Coefficient | P-value |
| :--- | :--- | :--- |
| year | .0005446 | 0.000 |
| yearXwave2 | .0000102 | 0.165 |

Table 10: Regression Results with Wave 2- Women

|  | Coefficient | P-value |
| :--- | :--- | :--- |
| year | .0013023 | 0.000 |


| yearXwave2 | $2.25 \mathrm{e}-06$ | 0.686 |
| :--- | :--- | :--- |

Table 11: Regression Results for Wave 3
The two tables of regression results above represent the time series for the proportion of men and women who went to college for 5 or more years and the interaction variable yearXwave2.

|  | Coefficient | P-value |
| :--- | :--- | :--- |
| Year | .002057 | 0.000 |
| yearXwave3 | -0.0000125 | 0.000 |
| year | .0019081 | 0.000 |
| yearXwave3 | -0.0000211 | 0.000 |

For both sexes, the coefficients for the interaction variable were insignificant. However, the coefficients for "year" were both statistically significant.

Table 12: Regression Results with Wave 3- Women

|  | Coefficient | P-value |
| :--- | :--- | :--- |
| year | .002057 | 0.000 |
| yearXwave3 | -0.0000125 | 0.000 |

Table 13: Regression Results with Wave 3- Men

|  | Coefficient | P-value |
| :--- | :--- | :--- |
| year | .0019081 | 0.000 |
| yearXwave3 | -0.0000211 | 0.000 |

The regression results with only the impact of the third wave of feminism shows all significant variables. The coefficients for yearXwave3 are negative for both men and women, indicating a slight decrease in the proportion of men/women with graduate schooling. However, due to the fact that the graph showed a decrease in both sexes in educational attainment and the possibility that some factor unrelated to the feminist movements had this impact, I ran further regressions to understand the general trend. To test if there is an upward trend, I changed the dummy variable to include fewer and fewer years. For instance, I ran a regression when the dummy variable included years 1992 and up. I then compared that to a regression with the dummy variable including years 1993 and up. What I found was that as I included fewer years, the $y$-intercept for women is increasing indicating an upward trend in the proportion of women with graduate schooling.

## Results for Educational Attainment:

These results are more inconsistent that those for the income data most likely due to the extreme fluctuations for both sexes over time. All of the second wave coefficients are insignificant while the third wave coefficients show a negative relationship with the proportion of men and women attending graduate school. This seems to indicate that when the waves were taking effect, the
proportion of individuals getting higher degrees was decreasing. However, I believe that this could be due to some other event since the decrease is consistent across both sexes.

## Labor Participation Analysis:

I included data on labor participation rates as well in this analysis to observe any changes in general labor participation as opposed to high income and highly educated individuals. This could provide some insight into whether middle/lower income earning women saw any impact from these movements.


Figure 3: LPR for Men and Women 1962-2011
This graph has been adjusted to only display years 1968-2011 due to inconsistent data. The first vertical line represents the beginning of the effects of the second wave of feminism, and the second line represents the beginning of the effects of the third wave. The graph shows a higher rate of increase in the LPR for women compared to men. In fact, it appears that during
this time period, the overall LPR for men actually decreased compared to a substantial increase for women. Looking at the end points of each wave's impact, the LPR change in women for the second and third wave were 0.0879 and 0.0234 , respectively. The LPR change in men for the second and third wave respectively were -0.0219 and -0.0283 .

Table 14: Regression Results with Wave 2 and Wave 3- Men

|  | Coefficient | P-value |
| :--- | :--- | :--- |
| year | -.0004646 | 0.135 |
| yearXwave2 | 0.000025 | 0.001 |
| yearXwave3 | $3.73 \mathrm{e}-06$ | 0.359 |

Table 15: Regression Results with Wave 2 and Wave 3- Women

|  | Coefficient | P-value |
| :--- | :--- | :--- |
| year | .0049192 | 0.000 |
| yearXwave2 | 0.0000745 | 0.000 |
| yearXwave3 | $-5.20 \mathrm{e}-06$ | 0.624 |

The only statistically significant coefficients are the interaction variable yearXwave2 for both sexes. They are also both positive indicating an increase in labor participation rate when the
second wave of feminism was in effect. However, the marginally larger coefficient on the second wave interaction variable suggests an increase in LPR at a greater rate in women.

Table 16: Regression Results with Wave 2- Men

|  | Coefficient | P-value |
| :--- | :--- | :--- |
| year | .0005446 | 0.000 |
| yearXwave2 | .0000102 | 0.165 |

Table 17: Regression Results with Wave 2- Women

|  | Coefficient | P-value |
| :--- | :--- | :--- |
| year | .0013023 | 0.000 |
| yearXwave2 | $2.25 \mathrm{e}-06$ | 0.686 |

For both of the interaction variables, the coefficients were insignificant.
Table 18: Regression Results with Wave 3- Women

|  | Coefficient | P-value |
| :--- | :--- | :--- |
| year | .0058038 | 0.000 |
| yearXwave3 | -0.0000118 | 0.328 |


|  | Coefficient | P-value |
| :--- | :--- | :--- |
| year | -0.0001681 | 0.608 |
| yearXwave3 | $1.52 \mathrm{e}-06$ | 0.733 |

Table 19: Regression Results with Wave 3- Men

For both of the interaction variables, the coefficients were insignificant.

## Results from LPR:

The results from these regressions for the most part were insignificant since almost every interaction variable was insignificant. The one result worth noting is that when the time series was run with both interaction variables, "yearXwave2" was significant and positive, indicating that as the second wave of feminism took effect, the labor participation rate was increasing by 0.0000745 .

## Results from adding interaction variable yearXfemale:

|  | Coefficient | P-value |
| :--- | :--- | :--- |
| year | 0.0002715 | 0.000 |
| yearXwave2 | $-1.35 \mathrm{e}-06$ | 0.190 |
| yearXwave3 | $8.30 \mathrm{e}-08$ | 0.923 |
| yearXfemale | $-5.41 \mathrm{e}-06$ | 0.000 |

I also generated the interaction variable yearXfemale, which interacts the year with the dummy variable for gender ( 1 for female and 0 for male). This allows for the coefficient on "year" to be the change in the proportion of high earning males to serve as the counterfactual trend to which we can compare the coefficient on the interaction variable which is the proportion of high earning females. The only two variables that were statistically significant were "year" and "yearXfemale" while the coefficients on the wave interaction variables were insignificant. The gender interaction variable shows that the number of high income women was actually decreasing over time while the proportion of high income men was increasing contrary to what the graph depicts. However, due to the fact that the coefficient is very small, it could be due to the fact that there are many small fluctuations in the proportion of high income women.

## Chapter 7

## Conclusion

Overall, the second wave did not appear to be statistically significant when it came to increasing the number of women with high incomes or graduate studies. According to these analyses, the third wave could have had some impact on the number of high earners, and thus very successful in their professional lives.

The third wave was more focused on increasing the number of women in universities and getting professional degrees, so that could explain why the third wave appears to have a more significant impact on women's earnings and educational attainment. The second wave had more social goals rather than economic which explains why the second wave was largely insignificant and when it did yield significant results, the earnings of women actually decreased. In addition, the second wave was far more fragmented but the third wave was an opportunity for feminists to unite their base and achieve their goals.

There is speculation on whether or not the fourth wave has already begun, but if the wave focuses on economic goals rather than social, it appears that this movement could have a significant impact on women in high level corporate positions. If the fourth wave follows the same trajectory as the third wave, it could result in progress towards eliminating inequality between men and women.

## BIBLIOGRAPHY

Bystrom, D. G. (2016). Women in the american political system: Volume 2. Place of publication not identified: Libraries Unlimited.

Maxwell, A., \& Shields, T. (2018). The legacy of second-wave feminism in American politics. Cham, Switzerland: Palgrave Macmillan.

Caughie, P. L. (2010). Theorizing the 'first wave' globally. Feminist Review,(95), 5-9. Retrieved November 26, 2018.

Mann, S. A., \& Huffman, D. J. (2005). The Decentering of Second Wave Feminism and the Rise of the Third Wave. Science \& Society,69(1), 56-91. doi:10.1521/siso.69.1.56.56799 Orr, C. M. (1997). Charting the Currents of the Third Wave. Hypatia, 12(3), 29-45. Retrieved November 26, 2018.

Messer-Davidow, E. (2002). Disciplining feminism: From social activism to academic discourse. Durham: Duke University Press.

Krolokke, C., \& Sorenson, A. S. (2005). Three Waves of Feminism: From Suffragettes to Grrls. Contemporary Gender Communication Theories \& Analyses: From Silence to Performance,1-23. Retrieved November 26, 2018.

Four Waves of Feminism. (2017, November 15). Retrieved from
https://www.pacificu.edu/about/media/four-waves-feminism

Lee, P. M., \& James, E. H. (2007). She'-E-OS: Gender Effects and Investor Reactions to the Announcements of Top Executive Appointments. Strategic Management Journal,28(3), 227-241. Retrieved November 26, 2018.

Bertrand, M. (2009). CEOs. Annual Review of Economics,1, 121-149.

Giordano, A. (2013). Free Labour, Free Women. Re-appraising Harriet Taylors Feminist Economics. History Of Economic Thought And Policy,(2), 45-62. doi:10.3280/spe2013002003Horn, J. (2009).

Through the Looking Glass: Process and power within feminist movements. Development,52(2), 150-154. doi:10.1057/dev.2009.2228 Nyland, C., \& Dimand, R. W. (2003). The status of women in classical economic thought.Northampton, MA: Edward Elgar Pub.

The Data on Women Leaders. (2018, September 13). Retrieved from http://www.pewsocialtrends.org/fact-sheet/the-data-on-women-leaders/

Dohmen, Thomas, Armin Falk, David Huffman, Uwe Sunde, Jürgen Schupp, and Gert G. Wagner. "Individual Risk Attitudes: Measurement, Determinants, and Behavioral

Consequences." Journal of the European Economic Association 9, no. 3 (June 2011): 522-550.

Bertrand, M. (2018). The Glass Ceiling. Retrieved January 23, 2019.

Consumer Price Index Data from 1913 to 2019. (2019, February 22). Retrieved from https://www.usinflationcalculator.com/inflation/consumer-price-index-and-annual-percentchanges-from-1913-to-2008/

## ACADEMIC VITA

## Sangeetha Kannan

## Education:

Schreyer Honors College at The Pennsylvania State University, University Park, PA
Graduation:|May 2019
Bachelor of Science Degree in Economics

## Bachelor's Degree in Finance

## Work Experience:

The Undergraduate Speaking Center January 2017 - Present
Speech Mentor

- Mentor students in public speaking skills
- Provide guidance in the speech writing process

Finance Department of the Smeal College of Business April 2018-July 2018 Research Assistant

- Aid professor in conducting research on federal bond trends before and after world wars
- Review hedge fund reports.

Montgomery County District Attorney's Office June 2016- August 2018 Discovery Unit Intern

- Assemble discovery to be sent to defense counsel
- Attend weekly presentations on topics concerning criminal cases

Clubs and Activities:
Penn State Mock Trial Association
Vice President April 2018-Present

- Plan logistics for attending invitationals at other schools such as booking hotel rooms and rental cars
- Choose the tournaments that Penn State Mock Trial attends
- Manage recruitment of new members

Chairperson of the Team Selection Committee September 2017-Present

- Select teams for our competition season and monitor the competitive status of members
Tournament Director April 2017-March 2018
- Plan all tournaments hosted at Penn State by inviting teams and reserving necessary space
- Manage tournament and troubleshoot when necessary

Judging and Alumni Coordinator
April 2016-March 2017

- Recruit judges to judge for tournaments held at Penn State
- Create and manage network for mock trial alumni

Judicial Board
Deputy Commissioner of Candidacy/Justice April 2016 - Present

* Resolve conflicts and violations within the University Park Undergraduate Association
* Sit on the Elections Commission and ensure that all candidacy requirements are met

Achievements and Awards:
Paterno Fellows Scholarship (full- tuition for four years) August 2015-Present
Schreyer Academic Excellence Scholarship
Dean's List
All Region Attorney Award
Fall 2015-Present

President's Freshman Award August 2015-Present

February 2018
December 2015

