Overworked or Underloved?

Exploring the relationship between overtime work and marital stability for high-income occupations

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Abstract

This thesis explores an aspect of the work-family conflict by researching the impact of overtime work on divorce rates for high-income occupations. The work-family conflict refers to the conflict that exists within a relationship when work impedes on key, familial responsibilities. Overtime work is an example of this phenomenon, as increased time at the office can act as a catalyst for tension at home. I define overtime work by studying the usual hours worked in a week for individuals, and I specifically study various high-earning occupations to see how additional overtime work affects divorce rates. By analyzing ACS data from 2012-2019, I find that increased overtime hours tend to negatively impact divorce rates. Further, I find that this impact exists primarily in positions that work numerous overtime hours per week, whereas the effect is marginal for those who work limited overtime hours.

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I. Introduction

Two constants that have always existed throughout history are work and family, and although distinct, the two hold more in common than it may initially seem. Both necessitate significant time and effort, appearing as long-term commitments that ultimately hold the potential to shape one's life drastically. However, as work-hour demands have slowly subsided over time and divorce rates in America continue to decrease, it begs the question of what factors have allowed successful careers and stable family lives to coexist better.

This paper studies the effects of overtime work hours on divorce rates to test an aspect of the greater work-family conflict. The work-family conflict refers to balancing time between one's career and familial commitments, and this research aims to better understand how overtime work affects this phenomenon. Divorce rates represent the familial aspects of the work-family conflict because a divorce indicates that the marriage was unsuccessful and, therefore, a form of conflict existed. Likewise, an individual's usual hours worked in a week represents overtime work, because individuals who have exceeded the standard 40-hour work week can be assumed to have worked overtime. To test this variation, I created three distinct occupation groups, and then examined how the differences in their respective work schedules and income levels influenced the divorce rates of individuals. This paper aims to answer two primary questions:

1. Do overtime hours have a positive effect on the divorce rates of individuals working high-paying, high-hour jobs?
2. If so, does the effect of overtime hours on divorce rates vary depending on related factors to the individual, such as gender, race, or number of children?

The objective of my research is to better understand not only how overtime hours affect marital stability, but also the factors which influence the greater work-family conflict. Contrary to my hypotheses, I find that additional work hours negatively impact divorce rates, but that these effects are only economically significant at high levels of overtime work per week.

II. Background

Relevant Context

Researchers have analyzed divorce rates and work hours in the United States for decades, noting significant changes in their frequency over time. In 2019, divorce rates reached a 30 year low, as it was recorded that there were 2.7 divorces per 1,000 people in America, a 51% decrease from 1990 (Statista, 2019). Similarly, weekly work hours in America have steadily declined as well, as the average work week has become 5 hours shorter over the last century (Bick, Fuchs-Schundeln and Lagakos, 2018). A noticeable decline in both divorce rates and usual hours worked in America in recent decades suggests there could be a positive correlation between the two, which supports my hypothesis.

Literature Review

The Work Family Conflict

Work has always been a core aspect of human life. But, as careers progress and work responsibilities increase, work can pose severe challenges towards maintaining a balance between a family and a career. The existence of a conflict of balance between work and non-work commitments outlines the idea of the work-life conflict, which assumes that employees have a fixed number of resources to allocate to their various commitments, and conflicts among those roles can constrain and disrupt their ability to function (Pasamar, Johnston, and Tanwar, 2020). People value their jobs and personal lives, which tend to impede one another as careers advance and personal commitments progress. The most common of these personal commitments is familial life.

Similar to one's career, familial relationships continually evolve. For many individuals, the journey involves marriage and parenthood, necessitating ongoing commitment and meaningful time investments for their success. An effective balance between the two is necessary, and when a disruption occurs, it creates a work-life conflict. This conflict occurs as work and family domains become mutually incompatible (Wong and Goodwin, 2009).

Work-life conflicts can arise in a variety of ways, for example, from economic shocks that cause increased work hours or schedule shifts that disrupt familial routines, but they can arise due to gender as well. Research indicates that extended commute times can lead to work-life conflicts among men (Bai et al., 2021), while job promotions tend to generate increased work-life conflict for women (Folke and Rickne, 2020). Ultimately, career changes and advancements can interfere with the stability of familial life in various ways because they strain the necessary time needed to fulfill one's differing roles as both an employee and a family member.

Role Overload and Prioritization

A person's "roles" refers to the presumption that all people are subject to differing roles in their lives, which are associated with their diverse responsibilities. For example, a person can be a boss, husband, father, son, and friend, depending on which of these distinct roles they are engaged in. Each role has demands and responsibilities, and individuals only have a finite pool of resources to allocate (Mittal and Bhakar, 2018). Role overload occurs when an individual cannot adequately fulfill every role, leading to insufficient allocation of resources to meet the demands of each role within a specific period (Mittal and Bhakar, 2018), thereby causing harm to the individual. A study examined the concept of role overload among women in the banking

sector, where individuals were expected to fulfill the roles of both employee and spouse and, in many cases, the role of a mother too. The results found that women experiencing role overload experienced job dissatisfaction, distress, and fatigue, as trying to fulfill work and family responsibilities was not sustainable (Mittal and Bhakar, 2018). Because many people cannot allocate their resources sufficiently to their varying roles, a work-life conflict is created, as people must prioritize one role above others and ultimately sacrifice aspects of their career or familial life.

Role prioritization has two plausible outcomes, each with the potential for significant effects on an individual's life. There is the prioritization of work, which causes the demands of a job to interfere with familial life and results in work-family conflict (Tran, 2022). Conversely, there is the prioritization of familial life, where the demands of one's personal life impede work responsibilities, giving rise to a distinct phenomenon known as the family-work conflict (Tran, 2022). For many, resources are allocated towards the career because of its financial importance, which familial life is also dependent upon, and my research aims to explore solely the work-family conflict that ensues rather than the family-work conflict.

The incentive to prioritize work over familial life can be understood by the culture surrounding career advancement and the potential consequences of failure within the workplace. The United States is founded upon the "American dream", in which hard work and continual dedication to one's job are glamorized for its ability to provide an improved life. This glamorization and the financial security often associated with career progression can make job prioritization desirable. However, studies have shown that career success can also correlate to familial life. Research has examined the relationship between wage reductions and relationship instability and found that a decline in income can often result in increased marital instability

(Keldenich and Luecke, 2019). Additional research also found that job loss tends to curtail the desirability of young men as potential husbands, which ultimately reduces the marriage pool (Autor, Dorn, and Hanson, 2019). Success and stability within one's career are attractive qualities, and the pressure to appear financially sound, coupled with the cultural emphasis surrounding the benefits of job commitment, provides many with the incentives necessary to prioritize their careers as the primary roles within their lives. Therefore, while I hypothesize that overtime work increases marital instability, it could potentially be beneficial instead. Increased overtime work is also often associated with financial stability and job security, and it potentially could decrease marital instability within high income occupations because of this.

Non-standard Work Hours

Career prioritization can impede familial responsibilities by changing work schedules, with non-standard working hours being a typical example of this shift. Non-standard work hours refer to any form of work that is completed outside the usual 9:00 am – 5:00 pm, Monday to Friday work schedule in America. While non-standard hours have always existed, their frequency has steadily risen over the past few decades. An advance in information and technology has allowed work to be completed anywhere and at any time, and the associated "supplemental work" leads to extended work hours and a higher frequency of work at non-standard times (Presser, 2004).

While non-standard hours have many advantages, such as workspace flexibility and increased productivity, they also create several challenges. Companies have an incentive to extract maximum output from their employees, and the advancements in technology and information that have enabled non-standard work hours to increase in frequency have also

allowed for more work to be completed (Presser, 2004). Additionally, while more work undoubtedly benefits a company's operations, it threatens to disrupt the stable social rhythms that individuals have created away from work (Presser, 2004). For example, the evening meals or weekend activities that a person might engage in outside of their job are considered to be the most valuable hours of the day, because they have been shown to foster social participation (Presser, 2004). For individuals with familial responsibilities, those hours spent outside work hold even greater significance, as familial relationships require consistent commitment and time to be maintained. Studies have shown that an increase in non-standard work hours resulted in individuals spending less time in their key familial roles and also contributed to scheduling difficulties, increasing the work-family conflict (Molina, 2020).

Studies examining the role of non-standard work hours and their quantitative effect on the work-life balance are limited, but there have been key findings surrounding the effects of extensive work hours and work reductions on aspects of familial life. A study done by Arden M. Jones and Kevin B. Jones examined how restricting the resident surgeon's work week to 80 hours affected marriage and childbirth among workers. The results saw a steady increase in marriages and a drastic rise in childbirths, which indicates that reducing non-standard work hours has played a role in improving family life among residents, therefore reducing the work-life conflict (Jones and Jones, 2007). Additional research has also examined the qualitative effects of increased work engagement and overtime work on the personal well-being and familial lives of individuals. The research found that the over-prioritization of work can lead to dissatisfaction and neglect, and this stress ultimately contributes to work-life conflict as well (Skurak, Malinen, and Kuntz, 2021). Both of these studies demonstrate that an increase in work hours can have a negative effect on the work-family conflict, but also emphasize the need for additional research.

My research aims to build on these two studies by examining a more specific topic within the work-family conflict in two primary ways. Firstly, my thesis will examine the issue of non-standard hours by strictly testing overtime hours as a form of non-standard work scheduling. Secondly, it will test marital stability through divorce rates to examine the ensuing family conflict that results from extensive overtime hours. Ultimately, I wanted to provide quantitative insight into how the work-family conflict exists by assessing the effect of overtime hours on divorce rates. By doing so, I will help expand on previous work within the field, as well as provide new research through my concentration on specifically high-income occupations.

III. Methodology

Approach

Testing overtime work without an exogenous shock is challenging because it makes variable controlling very difficult. Initially, I wanted to find a form of overtime policy variation, but because overtime laws are federally mandated, no such legislation exists that I can test. Therefore, I had to employ an alternative approach to test overtime work, by measuring an individual's usual hours worked in a week. Because the 40-hour workweek is the accepted standard in America, I can measure overtime work by using the difference between a person's weekly work hours and this 40-hour standard. For instance, an individual who works 45 hours is treated as having worked 5 hours of overtime work per week within my study. Furthermore, I can then limit which occupations I specifically want to examine to ensure that the pool of individuals being studied fits the scope of my research. Because I want to examine the impact of overtime work for high-paying occupations, I will explicitly research individuals within these designated high-earning jobs and test how their usual hours worked in a week affect their respective divorce rates. Lastly, I will measure additional factors such as sex, race and children to see how the impact of overtime work varies by gender, ethnicity and parental status.

Introduction to the ACS

The U.S. Census Bureau's American Community Survey (ACS), is a comprehensive nationwide survey conducted annually in the United States. Started in 2005, the ACS is a continuous, nationwide survey designed to provide communities with reliable and timely social, economic, housing, and demographic data on an annual basis. The survey is sent to 3.5 million Americans per year and is the largest household survey that the American Census Bureau

administers. The ACS is annually published, and as a result its data is readily available several different platforms. The Integrated Public Use Microdata Series (IPUMS) is a project dedicated to providing census and survey data from around the world. As a result, they have access to the ACS data, which can be downloaded from their website. Therefore, I will be using the 2012 - 2019 ACS data to conduct my research, which I will be obtaining from the IPUMS website.

Discussion of Dataset

The 2012 - 2019 ACS data provides an important level of personal and economic data necessary to test the effects of overtime work on marital stability. I specifically needed time-series data to satisfy my research, which meant that I needed ACS data ranging across multiple periods. As a result, I chose ACS data from the years of 2012 – 2019. This period of time was chosen because it's a modern, successive range of data positioned between two major U.S. economic crises. 2012 was chosen as the first year because it was the first year of ACS data relatively unaffected by any lingering economic effects from the housing crisis of 2009. Likewise, 2019 was chosen as the last year because any annual data collected after 2019 would be affected by the effects of the COVID-19 pandemic. After selecting the range, I then removed all individuals listed as "never married/single" within the 2012 – 2019 ACS dataset to better improve testing and data storage. The final dataset has 14,808,725 observations across a range of 8 years, and included both ACS and user-generated variables.

ACS variables within the dataset included the census year and the specific person numbers to track specific observations, as well as the occupation variable, wage and income variable, the usual hours worked variable, the educational attainment variable, the marital status

variable, the number of children in the household variable, the sex variable, the year variable, and the race variable.

I also created variables from the existing 2012 – 2019 ACS data to use within my research, and those created variables included a high working hours binary variable, a surgeon binary variable, a physician binary, a sales manager binary, an architectural and engineering managers binary, a dentists binary variable, a pharmacists binary, a marketing managers binary, a financial managers binary, a divorce binary, and a children binary variable.

Variable Selection

Familial conflict is a complex phenomenon to measure because many of the components that comprise its existence are not easily studied. As such, I use divorce rates as the primary metric to indicate familial conflict because of its measurability. Other components of familial conflict, such as happiness indexes, personality traits, and shocks to family life, such as death or sickness, are all relative and qualitative. The way an individual feels and reacts due to these emotions is challenging to standardize and test for, and thus, were not variables that I could consider in determining a quantitative assessment of familial conflict. Divorce rates were selected because they are binary in nature, uniform, and comprise a significant component of familial life. Many people consider marriage as the cornerstone of family life, and examining divorce rates allows this research to categorize these marriages as either successful or failed. If a marriage ends in divorce, I make the assumption that the marriage was unsuccessful as the divorce indicates that some form of conflict caused the marriage to deteriorate. Moreover, because divorce is a binary statistic that does or doesn't apply to all individuals, I selected it as the variable to represent familial conflict.

The work aspect of the work-family conflict was also challenging to represent with a single variable because it comprises several components as well. However, I chose the usual work hours in a week because of their significance to an individual's job and ability to represent overtime work. While the American Community Survey does not contain a variable explicitly measuring overtime hours, overtime work can be determined by examining an individual's usual hours worked in a week and then measuring it against the standard 40-hour work week in America. Additionally, the usual hours worked by an individual best represent a form of work conflict because it was the most apparent factor in representing the time constraints that exist when balancing the responsibilities of a job and a family. A person has a finite amount of time to allocate to each of their responsibilities, so this research relies on the assumption that an increase in hours worked in a week represents a corresponding decrease in time spent with family, which would potentially contribute to marital conflict.

To test the effects of overtime work on divorce rates, there needs need to be an identifiable variance in working hours between individuals that can be studied, while still controlling for additional variables that could also influence overtime work. Determining how this variance would be measured however proved to be difficult due to limited discrepancy in American overtime policies. Ultimately, I decided that testing the variance in hours of specific occupation groups would be best to demonstrate the effect of varying levels of overtime work using the 2012 - 2019 data from the American Community Survey.

Variable Discussion

The primary dependent variable studied throughout my research was divorce rates, which is a variable I created using the marital status variable provided in the ACS. It is a binary

variable, and respondents whose marital status was recorded as “married”, “married spouse absent” or “widowed” under the ACS data were given a 0, indicating they have never been divorced. Respondents who answered that they are either “separated” or “divorced” under the marital status variable within the ACS dataset I then coded as a 1, indicating that they have been divorced or are in the process of finalizing one. Additionally, all individuals whose status was recorded as “never married/single” under the marital status variable were dropped from the dataset entirely.

Another key variable within my research was the usual hours worked variable provided by the ACS data, which reports the number of hours per week that the respondent typically works if the person worked during the previous year. During the ACS interviews, respondents were asked: “during the past 12 months (52 weeks), in the weeks worked, how many hours did this person usually work each week?” Additionally, the variable is top coded so that 99 hours is the maximum number of hours a respondent can be coded as having worked.

I also use the usual hours worked variable to create the high working hours binary variable. Individuals who had an average usual hours worked in a week of 45 hours or more were coded a 1, and all individuals who had an average usual hours worked in a week below 45 hours were coded a 0. Thus, all individuals coded a 1 are considered to consistently work high-hours. I use this variable as the basis for the first occupational group tested, Group 1.

The primary variables I use to analyze an individual’s job were the occupation variable, and then separate occupation binary variables created from the provided ACS occupation codes. The occupation variable reports a person's primary occupation, coded into a contemporary census classification scheme. The ACS survey specifically asked respondents: “What kind of work was this person doing?” and generally, the primary occupation is the one from which the

person earns the most money. However, if respondents were not sure about which occupation earned the highest income, they were to report the one at which they spent the most time. Unemployed persons were to give their most recent occupation, and for persons listing more than one occupation, the samples use the first one listed. I created the respective occupational binary variables from the specific occupation codes found within the 2012 - 2019 ACS data. For instance, the ACS occupation code of 3100 is assigned to all surgeons within the ACS data. To create the surgeon binary variable, respondents were coded as a 0 if their occupation code was not 3100, and were coded a 1 if the code was 3100 and they are therefore surgeons. I repeated this process for each additional occupation tested, so that an individual binary variable was created for surgeons, as well as physicians, sales managers, architectural and engineering managers, dentists, pharmacists, marketing managers, and financial managers.

The wage and salary income variable reported each respondent's total pre-tax wage and salary income - that is, money received as an employee - for the previous year. The censuses collected information on income received from these sources during the previous calendar year, and the ACS survey specifically asked respondents to report their: “wages, salary, commissions, bonuses, or tips from all jobs. Report the amount before deductions for taxes, bonds, dues, or other items.” Payments-in-kind or reimbursements for business expenses are not included. All of the amounts are expressed in contemporary dollar figures, and the variable is top coded so that the maximum income and wage is $999,999.

The kids variable was created from the information found within a separate variable measuring the number of children an individual has in the ACS dataset. The number of children variable counts the number of own children (of any age or marital status) residing with each individual. This includes step-children and adopted children as well as biological children. It is

top-coded, and the maximum number of children an individual can be recorded as having is 9. To create the children variable, I use information provided from the number of children ACS variable. Respondents who answered that they have no children within the number of children variable are coded a 0, and respondents who answered that they have any number of children are coded a 1.

Other relevant variables include education, which indicates respondents' educational attainment, as measured by the highest year of school or degree completed, sex, which reports whether the person was male or female, year, which represents the year the data was collected from, and the race of individuals within the survey.

Fixed Effects Model

To measure the impact of overtime work, I test the variation of work hours between different occupations by using a fixed effects model. This specific regression model allows me to measure the variation in divorce rates attributable to key independent variables within my regression, such as usual hours worked, while still capturing the variation specific to different occupations. The primary characteristic of a fixed effects model is that it includes specific fixed effects variables that help to control for unobserved heterogeneities. My specific model contains two important fixed effects: occupation and time. Occupation is treated as a fixed effect within my model to control for differences between individuals who choose to work a certain job as opposed to another. Each separate occupation has unobserved characteristics such as job demands, skill requirements, and work environments that are all relevant to that specific job structure and the decision to choose that career path. A fixed effects model helps me control for those unobservable differences by holding occupation-specific factors constant. Likewise, I also treat

time as a fixed effect within my regression model. A fixed effects model requires time-series data, and because my data spans several years, there are therefore unobserved time-specific factors within my data. Treating time as a fixed effect helps me better control for time-specific effects that span across periods and affect my results. Ultimately, by using a fixed effects model, I can improve my overall variable control and the biases and precision of estimates within my research.

Equation 1 provides the base regression for the fixed effects model that I use. Within this equation, divorce represents the probability of divorce, uhrswork is the usual hours worked by an individual, α_o represents the controlled occupation of an individual, and α_y represents the controlled year from which the data was collected. By controlling for both as fixed effects, the regression model accounts for unobserved heterogeneity within occupation and year levels, which reduces the influence of confounding factors. This base model omitted the other independent variables as a preliminary step to assess whether there are indeed fixed effects present in the data.

Equation 1: Base Regression Equation

$$\text{Divorce} = \beta_0 + \beta_1(\text{uhrswork}) + \alpha o + \alpha y + \mathcal{E}$$

In addition to this regression, I test several other combinations of this base equation. By interacting the remaining independent variables with the existing usual hours worked independent variable, I was able to explore whether the relationship between hours worked and divorce differs between sexes, races and parental statuses. **Equations 2, 3, 4 and 5** demonstrate this phenomenon, as each of these equations incorporates additional independent variables within their respective regressions. I use **Equation 2** to test for the interaction between the usual hours

worked of individuals and their gender. Sex represents a binary variable that indicates if a person is a female or not, and the omitted group is men. The coefficient of usual hours worked multiplied by sex represents how the relationship between hours worked and divorce differs between different genders. All other components of **Equation 2** are the same as **Equation 1**.

Equation 2: Interaction with Sex

$$\text{Divorce} = \beta_0 + \beta_1(\text{uhrswork}) + \beta_2(\text{sex}) + \beta_3(\text{uhrswork} \times \text{sex}) + \alpha o + \alpha y + \varepsilon$$

Equation 3 tests for the interaction between the usual hours worked by individuals and if an individual was a parent or not. Kids represent a binary variable that indicates if a person has kids or not, in which not having any children is the omitted group. The coefficient of usual hours worked multiplied by kids represents how the relationship between hours worked and divorce differs between parents and non-parents. All other components of **Equation 3** are the same as **Equation 1**.

Equation 3: Interaction with Children

$$\text{Divorce} = \beta_0 + \beta_1(\text{uhrswork}) + \beta_2(\text{kids}) + \beta_3(\text{uhrswork} \times \text{kids}) + \alpha o + \alpha y + \varepsilon$$

Equation 4 is used to test for the interaction between the usual hours worked by individuals and their race. Race represents a binary variable that indicates if a person's ethnicity is White, Black, or neither White or Black. The coefficient of usual hours worked multiplied by race represents how the relationship between hours worked and divorce differs between different ethnicities. All other components of **Equation 4** are the same as **Equation 1**.

Equation 4: Interaction with Race

$$\text{Divorce} = \beta_0 + \beta_1(\text{uhrswork}) + \beta_2(\text{race}) + \beta_3(\text{uhrswork} \times \text{race}) + \alpha o + \alpha y + \varepsilon$$

Equation 5 includes every independent variable, to control for how divorce and usual hours worked differ by gender, race and parental status. Within this equation, sex represents the gender of a person, kids represent if a person is a parent or not, and race represents the ethnicity of a person. All other components of **Equation 5** are the same as **Equation 1**.

Equation 5: Controlling For Sex, Race & Parental Status

$$\text{Divorce} = \beta_0 + \beta_1(\text{uhrswork}) + \beta_2(\text{sex}) + \beta_3(\text{kids}) + \beta_4(\text{race}) + \alpha o + \alpha y + \varepsilon$$

Occupational Conditioning

The final component of my fixed effects model was to create a way to designate specific occupations to include within the regressions. While occupation as a whole is controlled for within the model, I wanted to test specific occupations that worked overtime hours, rather than all occupations entirely. To do this, I created three distinct fixed effects regression sets, which were designated by specific occupational conditions. These conditions allowed me to test the same fixed effects models seen in **Equations 1- 5** but with different occupational groups.

High-Hours Variable: Group 1

The first set of regressions that I test is conditioned so that the high-hours variable is used to designate occupation. The variable contains a wide range of occupations because the high-hours variable is a binary variable that includes all individuals who worked 45 or more hours per

week. All individuals within this high - hours variable will be referred to as “Group 1” throughout the remainder of the research. **Figure 1** demonstrates the high - hours component of Group 1, as the median hours worked is 48 hours and the mean is 46.61 hours.

Figure 1: High-Hours Variable Usual Hours Worked

Usual Hours Worked	High-Hours Variable
Mean	46.61
Median	48
75%	60
90%	72

While the use of the high-hours variable was important to examine the comprehensive effects of overtime work on individuals, it also contained a participant pool that was overly broad at times. My research was concentrated specifically on individuals in high-income occupations, and because Group 1 included any person who worked 45 hours or more hours per week, there was a wide range of income levels within the variable itself. **Figure 2** shows this, as the median income for individuals in Group 1 is $75,000, which doesn’t capture the high-income aspect of the research question. As a result of this, I wanted the remaining occupation groups to be better concentrated around high-income occupations.

Figure 2: High-Hours Variable Income

Annual Income	High-Hours Variable
Mean	136,678
Median	75,000
75%	190,000
90%	402,000

Figure 3: Percent Breakdown of Variables for High-Hours Variable

Variable	High-Hours Variable
Observations	139,039
Percent Divorced	10.74
Percent with Children	55.91
Percent Female	21.37
Predominant Education	5+ years of college
Percent White	79.44
Percent Black	5.37

High Hours - High Income Occupations: Group 2

The second set of fixed effects models that I test are conditioned so that only a specific set of high-income, high-working occupations were included within the model. The occupations included were surgeons, physicians, sales managers, and architectural and engineering managers. Individuals within this set of occupations will be referred to as "Group 2" for the remainder of this research. Those four specific occupations were chosen because they are the only jobs within the ACS dataset that have a mean annual income of $100,000 or more, and on average work overtime each week. **Figure 4** shows the hours component for the Group 2 occupations. Each job has a mean usual hours worked over 40 hours and a median usual hours worked of at least 45 hours, which represents consistent overtime work in these occupations.

Figure 4: Group 2 Usual Hours Worked

Usual Hours Worked	Surgeons	Physicians	Sales Managers	AEMs
Mean	51.36	44.5	42.33	41.72
Median	55	45	45	45
75%	65	60	50	50
90%	80	70	60	55

Figure 5 demonstrates the high-income component of these four occupations. Unlike the high-hours variable used in Group 1, these occupations are meant to capture individuals who work both high-hour and high – income jobs. As such, surgeons, physicians, sales managers, and architectural and engineering managers all have a mean annual income of at least $100,000, to represent the high-earning aspect of these jobs.

Figure 5: Group 2 Annual Incomes

Annual Income (dollars)	Surgeons	Physicians	Sales Managers	AEM
Mean	291,208	219,560	115,678	133,996
Median	300,000	189,000	90,000	120,000
75%	472,000	391,000	150,000	164,000
90%	565,000	476,000	225,000	229,000

Figure 6: Group 2 Percent Breakdown of Variables

Variable	Surgeons	Physicians	Sales Managers	AEM
Observations	1,220	18,696	9,360	14,093
Percent Divorced	6.89	8.16	13.34	8.44

Percent with Children	55.08	51.81	54.18	55.78
Percent Female	14.18	35.92	31.08	8.69
Predominant Education	5+ years of college	5+ years of college	4 years of college	4 years of college
Percent White	85.74	74.49	89.96	84.64
Percent Black	2.05	3.49	2.92	2.07

While the use of only four occupations does constrain the total pool of individuals within the model, these occupations are better aligned with the high-income focus of my research. However, I still wanted to include additional occupations within my model to both broaden the participant pool and improve occupational control as well. As a result, I decided to employ another occupational group in my final set of regressions.

High Hours - High Income & Low Hours – High Income Occupations: Group 3

The final set of regressions that I test are conditioned to include the occupations within Group 2, but also four separate high–income, low-working-hours occupations as well. I specifically wanted to include jobs that have similar, high annual incomes like those in Group 2, but work significantly fewer hours per week. These specific low-hour occupations include dentists, pharmacists, marketing managers and financial managers. This occupation group which contains the occupations from Group 2, as well as the dentists, pharmacists, marketing managers and financial managers will be referred to as "Group 3" for the remainder of the research. **Figure 7** shows the low working hours component of the new occupations in Group 3, as the mean usual hours worked was below 40 for each job.

Figure 7: Group 3 Usual Hours Worked

Usual Hours Worked	**Dentists**	**Pharmacists**	**Marketing Managers**	**Financial Managers**
Mean	34.25	34.35	38.46	39.19
Median	37	40	40	40
75%	40	40	50	50
90%	50	50	50	55

Figure 8 demonstrates the high–income requirement for these additional occupations, as each of these jobs has a mean annual income over $90,000. It is also important to note that financial managers have a much higher number of observations than the other selected occupations, which can be seen in **Figure 9**. This is because within the dataset, financial managers is treated as a broader financial management occupation, and is likely comprised of several different jobs within the space. Therefore, there are a much higher number of people in the financial manager occupation because it is made up of several jobs.

Figure 8: Group 3 Annual Incomes

Annual Income	Dentists	Pharmacists	Marketing Managers	Financial Managers
Mean	127,514	92,833	94,070	95,286
Median	94,000	104,000	72,000	67,000
75%	180,000	125,000	125,000	114,000
90%	373,000	147,000	195,000	190,000

Figure 9: Group 3 Percent Breakdown of Variables

Variable	Dentists	Pharmacists	Marketing Managers	Financial Managers
Observations	14,640	22,194	8,890	89,246
Percent Divorced	8.56	7.98	12.76	14.22
Percent with Children	50.19	53.40	56.54	53.57
Percent Female	26.65	39.41	60.34	55.52
Predominant Education	5+ years of college	5+ years of college	4 years of college	4 years of college
Percent White	81.99	84.52	86.81	84.91
Percent Black	2.35	1.28	2.43	4.98

Each of these specific occupations was chosen because they mirror the job structure and income of an occupation from Group 2. But, instead of working significant overtime, these mirrored occupations on average worked fewer than 40 hours per week. This helps provide a more nuanced understanding of which occupations might be more susceptible to the effects of additional work hours on divorce. For instance, dentists were chosen to rival surgeons because of the educational requirements, demographics and salaries are similar. However, surgeons work on average 50 hours a week while dentists only work 36 hours. Similarly, pharmacists were chosen to rival physicians, marketing managers to rival sales managers, and financial managers to rival architectural and engineering managers. Additionally, these four occupations were chosen because they were the only jobs that met both the high-income and low-hours criteria, while also working in either the medical or managerial space. As a result, the total occupations that I test

within Group 3 include surgeons, physicians, sales managers, architectural and engineering managers, dentists, pharmacists, marketing managers and financial managers.

IV. Results

Group 1

Table 1 shows the results of the baseline regression, which used the usual hours worked as the lone independent variable. The coefficient for the usual hours worked on divorce was found to be -0.00088, and this value is statistically significant at a .001 significance level. These results therefore can be interpreted to mean that, on average, for each additional hour worked per week, the divorce rate decreases by approximately 0.09 p.p., holding all other variables constant. To better represent the impact of the usual hours worked on divorce rates, it's important to consider the effect of numerous overtime hours. It is unlikely that a person's lifestyle and relationships at home are considerably affected by working one or two additional overtime hours per week, but this effect may be more prevalent at higher levels. For instance, consider the coefficient value for someone who works 20 hours of overtime work in a week, which is the equivalent of 60 usual hours worked. Multiplying the original coefficient value of -0.00088 by this difference of 20 hours yields a value of -0.018, which represents that individuals within the working hours variable that work 20 overtime hours per week are approximately 1.8 p.p. less likely to divorce for each additional hour worked per week. While this effect is still relatively marginal, the coefficient holds greater economic significance when considered in the context of many additional overtime hours, rather than of just one.

Table 1: Group 1 Base Regression

HDFE Linear regression — Number of obs = 139,039
Absorbing 2 HDFE groups — F(1, 14) = 19.43
Statistics robust to heteroskedasticity — Prob > F = 0.0006
R-squared = 0.0168
Adj R-squared = 0.0167
Within R-sq. = 0.0036
Number of clusters (occ) = 15 — Root MSE = 0.3071

(Std. err. adjusted for 15 clusters in occ)

divorce	Coefficient	Robust std. err.	t	P>|t|	[95% conf.	interval]
uhrswork	-.0008834	.0002004	-4.41	0.001	-.0013132	-.0004535
_cons	.1486058	.0093412	15.91	0.000	.128571	.1686406

While these initial results prove to be fairly minimal, I test how interacting the usual hours worked with additional variables such as sex, race, and parental status affect the impact on divorce rates.

Table 2 shows the results from the second regression run, which uses the high working hours variable but also incorporates the sex binary variable, which measures whether an individual is a woman or not. The coefficient on usual hours worked is -.00095, and is statistically significant at a .05 significance level. This indicates that on average, for each additional hour worked per week, the divorce rate decreases by approximately 0.095 p.p.. The coefficient on the sex binary variable was .019, and this value was also statistically significant at a .05 significance level. This means that on average, individuals within the high working hours variable who are women are 1.9 p.p. more likely to divorce. The coefficient on the interaction term between the usual hours worked and sex binary variable is .00079, and this value is again statistically significant at a .05 significance level. This means that on average, for each additional hour worked, women within the high working hours variable are 0.079 p.p. more likely to divorce than men with similar work hours.

Table 2: Group 1 Regression Interacting with Sex

HDFE Linear regression — Number of obs = 139,039
Absorbing 2 HDFE groups — F(3, 14) = 15.33
Statistics robust to heteroskedasticity — Prob > F = 0.0001
R-squared = 0.0217
Adj R-squared = 0.0215
Within R-sq. = 0.0085
Number of clusters (occ) = 15 — Root MSE = 0.3063

(Std. err. adjusted for 15 clusters in occ)

divorce	Coefficient	Robust std. err.	t	P>|t|	[95% conf.	interval]
uhrswork	-.0009537	.0002123	-4.49	0.001	-.0014091	-.0004983
sex						
female	.0186374	.006992	2.67	0.018	.003641	.0336338
sex# c.uhrswork						
female	.0007861	.0002647	2.97	0.010	.0002183	.001354
_cons	.1406179	.008302	16.94	0.000	.122812	.1584238

Table 3 shows the results from the third regression, which uses the high working hours as well as the kids binary variable, which measures whether an individual is a parent or not. Additionally, this model yielded the highest R-squared among the high-hours variable regressions, with a value of 0.048. The coefficient on usual hours worked is -.00025, however this value is not statistically significant, and therefore this is not a reliable measure. The coefficient on the kids binary variable is -.084, and this value is statistically significant at a .01 significance level. This means that on average, individuals within the high working hours variable with children are 8.4 p.p. less likely to divorce. The coefficient on the interaction term between the usual hours worked and the kids binary variable is -.00056. This value is statistically significant at a .01 significance level, and represents that on average, individuals with kids are

0.056 p.p. less likely to divorce than those without kids for each additional hour worked per week.

Table 3: Group 1 Regression Interacting with Kids

HDFE Linear regression — Number of obs = 139,039
Absorbing 2 HDFE groups — F(3, 14) = 24.87
Statistics robust to heteroskedasticity — Prob > F = 0.0000
R-squared = 0.0474
Adj R-squared = 0.0472
Within R-sq. = 0.0345
Number of clusters (occ) = 15 — Root MSE = 0.3023

(Std. err. adjusted for 15 clusters in occ)

divorce	Coefficient	Robust std. err.	t	P>|t|	[95% conf.	interval]
uhrswork	-.0002475	.000242	-1.02	0.324	-.0007665	.0002715
1.kids	-.0843148	.0218456	-3.86	0.002	-.1311689	-.0374608
kids# c.uhrswork 1	-.0005578	.0001802	-3.10	0.008	-.0009442	-.0001714
_cons	.1815216	.0182951	9.92	0.000	.1422826	.2207607

Table 4 shows the results from the fourth regression, which includes the race binary variable, which measures if an individual is White, Black or other. The coefficient on usual hours worked is -.00034, but the p-value of .113 indicates that this value is not statistically significant. The coefficient for Race 1 is .042, and this value is statistically significant at a .01 significance level. Race 1 represents individuals who are White, and this value therefore means that on average, White people are 4.2 p.p. more likely to divorce than non-White and non-Black individuals. The coefficient for Race 2 is .15, and this value is significant at a .001 significance level. Race 2 represents people who are Black, and this value therefore means that on average, Black individuals are 14.3 p.p. more likely to have a divorce within the high working hours

variable. The coefficient for the interaction between Race 1 and the usual hours worked is -.00055, and is statistically significant at a .001 significance level. This value means that on average, each additional hour worked per week by White individuals decreases the divorce rate by approximately 0.05 p.p. more than individuals who are neither White nor Black. The coefficient for the interaction between Race 2 and the usual hours worked is -.0015, and is statistically significant at a .001 significance level. This value represents that on average, each additional hour worked per week by Black individuals decreases the divorce rate by approximately 0.15 p.p. more than individuals who are neither White nor black.

Table 4: Group 1 Regression Interacting with Race

HDFE Linear regression — Number of obs = 139,039
Absorbing 2 HDFE groups — F(5, 14) = 282.65
Statistics robust to heteroskedasticity — Prob > F = 0.0000
R-squared = 0.0201
Adj R-squared = 0.0200
Within R-sq. = 0.0069
Number of clusters (occ) = 15 — Root MSE = 0.3066

(Std. err. adjusted for 15 clusters in occ)

divorce	Coefficient	Robust std. err.	t	P>|t|	[95% conf.	interval]
uhrswork	-.0003393	.0002009	-1.69	0.113	-.0007701	.0000916
Race						
1	.0416788	.0120209	3.47	0.004	.0158965	.0674612
2	.151716	.0186677	8.13	0.000	.1116777	.1917542
Race# c.uhrswork						
1	-.0005498	.0001275	-4.31	0.001	-.0008233	-.0002763
2	-.0014883	.0002957	-5.03	0.000	-.0021225	-.0008541
_cons	.1059819	.0153709	6.89	0.000	.0730145	.1389493

Table 5 represents the final set of regression results for Group 1. This model contains the high-hours variable, the sex, kids, and race binary variables for the examination of how these variables interact to influence divorce rates. The coefficient on the usual hours worked is -

0.00039, but this value is statistically significant at a .05 significance level. This can be interpreted to mean that, on average, for each additional hour worked per week, the divorce rate decreases by approximately 0.039 p.p., holding all other variables constant. The coefficient for the sex binary variable is .06 and is statistically significant at a .001 significance level. This represents that on average, individuals who are women have a 6 p.p. higher chance of divorce. The coefficient for the kids binary variable is -.11, and this value is also statistically significant at a .001 significance level. This means that on average, individuals with kids are 2 p.p. less likely to divorce. The coefficient for Race 1 is .014, but this value is not statistically significant. The coefficient for Race 2 is .079, and this value is significant at a .001 significance level. Race 2 represents people who are Black, and this value therefore means that on average, Black individuals are 7.9 p.p. more likely to have a divorce.

Table 5: Group 1 Regression Controlling for all Variables

HDFE Linear regression — Number of obs = 139,039
Absorbing 2 HDFE groups — F(5, 14) = 757.49
Statistics robust to heteroskedasticity — Prob > F = 0.0000
R-squared = 0.0554
Adj R-squared = 0.0552
Within R-sq. = 0.0427
Number of clusters (occ) = 15 — Root MSE = 0.3010

(Std. err. adjusted for 15 clusters in occ)

divorce	Coefficient	Robust std. err.	t	P>|t|	[95% conf.	interval]
uhrswork	-.0003904	.0001773	-2.20	0.045	-.0007706	-.0000101
sex						
female	.0604061	.0085581	7.06	0.000	.0420508	.0787614
1.kids	-.1126081	.0180666	-6.23	0.000	-.1513572	-.073859
Race						
1	.0136713	.0077456	1.77	0.099	-.0029414	.030284
2	.0786047	.0077069	10.20	0.000	.0620751	.0951343
_cons	.160599	.0202262	7.94	0.000	.1172182	.2039799

Ultimately, the impact of usual hours worked on Group 1 seems to be minimal, and the effects of usual hours worked on divorce varied marginally when interacted. To summarize these effects, for each additional hour worked, women are slightly more likely to get divorced than men, parents are less likely to get divorced than non-parents, and White and Black individuals are less likely to get divorced as well.

Group 2

Table 6 shows the results for the initial Group 2 regression, which used the usual hours worked as the lone independent variable. The coefficient for the usual hours worked on divorce is -0.00028, and it is statically significant at a 0.05 significance level. These results therefore can be interpreted to mean that, on average, for each additional hour worked per week, the divorce rate decreases by approximately 0.028 p.p., holding all other variables constant. However, it is again important to think of these coefficients in the context of extensive overtime hours. Multiplying this baseline coefficient by the same 20 hours used for Group 1 yields a value of -0.0056, which represents that an individual within Group 2 who works 20 hours of overtime a week would be 0.56 p.p. less likely to be divorced. Ultimately, this is still a relatively marginal decrease, but expressing the coefficient in the context of many overtime hours better demonstrates the limited economic significance.

Table 6: Group 2 Base Regression

HDFE Linear regression — Number of obs = 43,369
Absorbing 2 HDFE groups — F(1, 3) = 13.67
Statistics robust to heteroskedasticity — Prob > F = 0.0343
R-squared = 0.0059
Adj R-squared = 0.0057
Within R-sq. = 0.0003
Number of clusters (occ) = 4 — Root MSE = 0.2901

(Std. err. adjusted for 4 clusters in occ)

divorce	Coefficient	Robust std. err.	t	P>|t|	[95% conf.	interval]
uhrswork	-.0002774	.000075	-3.70	0.034	-.0005162	-.0000387
_cons	.1053455	.0032535	32.38	0.000	.0949914	.1156996

While these baseline results are more marginal than the baseline results from Group 1, I again test how interacting usual hours worked with additional variables such as sex, race, and parental status affect the impact on divorce.

Table 7 shows the results of the second regression run for Group 2. This regression again included the usual hours worked variable, but also incorporated the sex binary variable, which measures whether an individual is a woman or not. The coefficient for the usual hours worked on divorce is -.00027, which means that on average, for each additional hour worked per week, the divorce rate decreases by approximately 0.027 p.p., holding all other variables constant. However, it is important to note that this coefficient is not statistically significant, and therefore may not be an accurate indicator of the relationship between divorce rates and the usual hours worked in a week. The coefficient on the sex binary variable was .046, and this value is statically significant at a .01 significance level. These results therefore can be interpreted to mean that, on average, women within Group 2 are 4.6 p.p. more likely to be divorced than men. The coefficient

for the interaction term between the usual hours worked and the sex binary variable is .00027, however, this value was found to be not statistically significant.

Table 7: Group 2 Regression Interacting with Sex

HDFE Linear regression — Number of obs = 43,369
Absorbing 2 HDFE groups — F(3, 3) = 73.56
Statistics robust to heteroskedasticity — Prob > F = 0.0026
R-squared = 0.0128
Adj R-squared = 0.0125
Within R-sq. = 0.0073
Number of clusters (occ) = 4 — Root MSE = 0.2890

(Std. err. adjusted for 4 clusters in occ)

divorce	Coefficient	Robust std. err.	t	P>|t|	[95% conf.	interval]
uhrswork	-.0002672	.0000913	-2.93	0.061	-.0005577	.0000233
sex						
female	.0459743	.0058614	7.84	0.004	.0273207	.0646279
sex# c.uhrswork						
female	.0002774	.000317	0.88	0.446	-.0007313	.0012861
_cons	.0902557	.0027639	32.66	0.000	.0814598	.0990517

Table 8 shows the results from the third regression, which again uses the usual hours worked independent variable, but also includes the kids binary variable, which measures if an individual is a parent or not. The coefficient on the usual hours worked was .0004, and this value was statistically significant at a .01 significance level. This means that on average, for each additional hour worked per week, the divorce rate increases by approximately 0.04 p.p.. The coefficient on the sex binary variable is -.041, and this value is also statically significant at a .01 significance level. These results therefore can be interpreted to mean that, on average, individuals with children within the Group 2 occupations are 4.1 p.p. less likely to be divorced than individuals without children. Lastly, the coefficient for the interaction between the usual

hours worked and the kids binary variable is -.00079. This value is again statistically significant at the .01 significance level, and represents that each additional hour worked per week by an individual with kids decreases the divorce rate marginally by approximately 0.079.

Table 8: Group 2 Regression Interacting with Kids

HDFE Linear regression — Number of obs = 43,369
Absorbing 2 HDFE groups — F(3, 3) = 3165.61
Statistics robust to heteroskedasticity — Prob > F = 0.0000
R-squared = 0.0228
Adj R-squared = 0.0225
Within R-sq. = 0.0173
Number of clusters (occ) = 4 — Root MSE = 0.2876

(Std. err. adjusted for 4 clusters in occ)

divorce	Coefficient	Robust std. err.	t	P>|t|	[95% conf.	interval]
uhrswork	.0004008	.0000598	6.70	0.007	.0002105	.0005911
1.kids	-.0410245	.0042602	-9.63	0.002	-.0545825	-.0274665
kids# c.uhrswork 1	-.0007936	.0001325	-5.99	0.009	-.0012153	-.0003718
_cons	.1178106	.0011871	99.24	0.000	.1140326	.1215886

Table 9 shows the results from the fourth regression run for the Group 2 occupations, with the addition of the race binary variable, which measures if an individual is White, Black or other. The coefficient on usual hours worked is 6.16e-06, or 0.0000062, which means that on average there is no relationship between usual hours worked and divorce for those who are not Caucasian or not Black. Although this increase is extremely marginal, it is important to note that the coefficient is highly statistically insignificant, and is therefore not a reliable representation of the effect on divorce rates. The coefficient for Race 1 is .038, and it is significant at a .05 significance level. Race 1 represents individuals who are White, and this value therefore means that on average, White people are 3.8 p.p. more likely to have a divorce. The coefficient for Race

2 is .19, and this value is significant at a .001 significance level. Race 1 represents people who are Black, and this value therefore means that on average, Black individuals are 19 p.p. more likely to have a divorce. The coefficient for the interaction between Race 1 and the usual hours worked is -.00028, but this value is not statistically significant. The coefficient for the interaction between Race 2 and the usual hours worked is -.0019, and is statistically significant at a .05 significance level. This value represents that each additional hour worked per week by a Black individual decreases the divorce rate by approximately .19 p.p. less than individuals who are neither White nor black.

Table 9: Group 2 Regression Interacting with Race

HDFE Linear regression — Number of obs = 43,369
Absorbing 2 HDFE groups — F(5, 3) = .
Statistics robust to heteroskedasticity — Prob > F = .
R-squared = 0.0095
Adj R-squared = 0.0092
Within R-sq. = 0.0039
Number of clusters (occ) = 4 — Root MSE = 0.2895

(Std. err. adjusted for 4 clusters in occ)

divorce	Coefficient	Robust std. err.	t	P>|t|	[95% conf.	interval]
uhrswork	6.16e-06	.0001885	0.03	0.976	-.0005937	.000606
Race						
1	.0381153	.0049459	7.71	0.005	.0223751	.0538555
2	.1900018	.0167546	11.34	0.001	.1366814	.2433223
Race# c.uhrswork						
1	-.0002755	.0001545	-1.78	0.172	-.000767	.0002161
2	-.0019416	.0003518	-5.52	0.012	-.0030611	-.0008221
_cons	.0687185	.0061466	11.18	0.002	.0491572	.0882799

Table 10 represents the final set of regression results for Group 2. This model contains the usual hours worked, the sex, kids, and race binary variables for the examination of how these variables interact to influence divorce rates. It also has the highest R-squared value within Group

2 regressions, with a value of 0.033. The coefficient for the usual hours worked variable is .00022, and this value is statistically significant at a .01 significance level. These results therefore can be interpreted to mean that, on average, for each additional hour worked per week, the divorce rate decreases by approximately 0.026 p.p. holding all other variables constant. The coefficient for sex was .063, and is statistically significant at a .001 significance level. This value represents that women are approximately 6.3 p.p. more likely to have a divorce. The coefficient for Race 1 is .022, and this value is statistically significant at a .001 significance level. Race 1 represents individuals who are White, so this coefficient means that on average, White people are 2.2 p.p. more likely to be divorced. Race 2 represents individuals who are Black, and its coefficient was .098. This value is statistically significant at a .05 significance level, and represents that on average, Black individuals are 9.8 p.p. more likely to be divorced.

Table 10: Group 2 Regression Controlling for all Variables

HDFE Linear regression — Number of obs = 43,369
Absorbing 2 HDFE groups — F(5, 3) = .
Statistics robust to heteroskedasticity — Prob > F = .
R-squared = 0.0332
Adj R-squared = 0.0328
Within R-sq. = 0.0277
Number of clusters (occ) = 4 — Root MSE = 0.2861

(Std. err. adjusted for 4 clusters in occ)

divorce	Coefficient	Robust std. err.	t	P>|t|	[95% conf.	interval]
uhrswork	.0002167	.0000742	2.92	0.061	-.0000195	.0004528
sex						
female	.0627979	.0145617	4.31	0.023	.016456	.1091399
1.kids	-.078044	.0048901	-15.96	0.001	-.0936065	-.0624816
Race						
1	.0219851	.001268	17.34	0.000	.0179496	.0260206
2	.0982256	.0130052	7.55	0.005	.0568372	.1396139
_cons	.0891521	.005057	17.63	0.000	.0730585	.1052458

Ultimately, the impact of usual hours worked on Group 2 again was minor, and the effects of usual hours worked on divorce also varied minimally when interacted. **Table 10** does demonstrate the positive relationship that I hypothesized would exist, but the coefficient is not statistically significant. To summarize the additional interaction effects, for each additional hour worked, women are slightly more likely to get divorced than men, parents are less likely to get divorced than non-parents, and White and Black individuals are less likely to get divorced as well. Moreover, these coefficient values and signs for the variable interaction regressions are similar to those found in Group 1.

Group 3

Table 11 shows the results for the initial Group 3 regression, which uses the usual hours worked as the lone independent variable. The coefficient for the usual hours worked is -.00024, and this value was statistically significant at a .001 significance level. These results therefore can be interpreted to mean that, on average, for each additional hour worked per week, the divorce rate decreases by approximately 0.024 p.p., holding all other variables constant. However, it is again important to think of this coefficient in the context of numerous overtime hours, to better outline the effect on divorce. Multiplying the baseline coefficient by the 20 hours used for Group 1 and Group 2 yields a value of 0.0048. The means that on average, individuals in Group 3 who work 20 hours of overtime per week are 0.48 p.p. less likely to divorce. Even in the context of extensive overtime hours, the economic significance is extremely marginal.

Table 11: Group 3 Base Regression

HDFE Linear regression — Number of obs = 178,339
Absorbing 2 HDFE groups — F(1, 7) = 35.01
Statistics robust to heteroskedasticity — Prob > F = 0.0006
R-squared = 0.0068
Adj R-squared = 0.0067
Within R-sq. = 0.0001
Number of clusters (occ) = 8 — Root MSE = 0.3230

(Std. err. adjusted for 8 clusters in occ)

divorce	Coefficient	Robust std. err.	t	P>|t|	[95% conf.	interval]
uhrswork	-.0002382	.0000403	-5.92	0.001	-.0003334	-.000143
_cons	.1286181	.0015766	81.58	0.000	.1248901	.132346

While these baseline results are more marginal than the baseline results from Group 2, I again test how interacting usual hours worked with additional variables such as sex, race, and parental status affect the impact on divorce.

Table 12 represents the next regression run for this group, which included the addition of the sex binary variable. The coefficient on the usual hours worked variable is -.00061, and this value is statistically significant at a .01 significance level. This means that on average, for each additional hour worked in a week, the divorce rate decreases by 0.061 p.p.. The coefficient for the sex binary variable is .02, but this value is not statistically significant. The final coefficient for the interaction between the usual hours worked and sex is .0013, and is statistically significant at a .01 significance level. This value represents that on average for women, each additional hour worked per week increases the divorce rate by approximately 0.013 p.p..

Table 12: Group 3 Regression Interacting with Sex

HDFE Linear regression — Number of obs = 178,339
Absorbing 2 HDFE groups — F(3, 7) = 7.99
Statistics robust to heteroskedasticity — Prob > F = 0.0116
R-squared = 0.0188
Adj R-squared = 0.0187
Within R-sq. = 0.0122
Number of clusters (occ) = 8 — Root MSE = 0.3211

(Std. err. adjusted for 8 clusters in occ)

divorce	Coefficient	Robust std. err.	t	P>|t|	[95% conf.	interval]
uhrswork	-.000605	.0001624	-3.73	0.007	-.000989	-.0002209
sex female	.0198574	.0132716	1.50	0.178	-.0115249	.0512398
sex# c.uhrswork female	.0013312	.0003393	3.92	0.006	.0005288	.0021335
_cons	.111151	.0065114	17.07	0.000	.095754	.1265479

Table 13 shows the results from the third regression, which again uses the usual hours worked independent variable, but also includes the kids binary variable, which measures if an individual is a parent or not. The coefficient on the usual hours worked was .00054, and this value was statistically significant at a .001 significance level. This means that on average, for each additional hour worked per week, the divorce rate increases by approximately 0.054 p.p.. The coefficient for the kids binary variable is -.041, and this value is statistically significant at a .05 significance level. Therefore, this value represents that individuals who have children are 4.08 p.p. more likely to divorce. The coefficient on the interaction term between the usual hours worked and kids is -0.00094, and this value is statistically significant at a .01 significance level. This means that each additional hour worked per week by an individual with kids decreases the divorce rate marginally by approximately 0.094 p.p..

Table 13: Group 3 Regression Interacting with Kids

HDFE Linear regression — Number of obs = 178,339
Absorbing 2 HDFE groups — F(3, 7) = 412.99
Statistics robust to heteroskedasticity — Prob > F = 0.0000
R-squared = 0.0212
Adj R-squared = 0.0212
Within R-sq. = 0.0147
Number of clusters (occ) = 8 — Root MSE = 0.3207

(Std. err. adjusted for 8 clusters in occ)

divorce	Coefficient	Robust std. err.	t	P>|t|	[95% conf.	interval]
uhrswork	.0005446	.0000937	5.81	0.001	.0003231	.0007662
1.kids	-.0407741	.0096472	-4.23	0.004	-.0635861	-.0179621
kids# c.uhrswork 1	-.0009375	.000263	-3.56	0.009	-.0015594	-.0003156
_cons	.1407616	.0028485	49.42	0.000	.134026	.1474972

Table 13 shows the results from the third regression run, which includes the race binary variable, which measures if an individual is White, Black or other. The coefficient for the usual hours worked is -.0002, however this value is statistically insignificant and is therefore not a reliable measurement of the effect on divorce rates. The coefficient for Race 1 is .026, and this value is statistically significant at a .01 significance level. Race 1 represents individuals who are White, and this value therefore means that on average, White people are 2.6 p.p. more likely to have a divorce. The coefficient for Race 2 is .14, and this value is significant at a .001 significance level. Race 2 represents people who are Black, and this value therefore means that on average, Black individuals are 14.3 p.p. more likely to have a divorce. However, it is also important to note that the standard error for the Race 2 coefficient was much higher than others, with a value of .012. The coefficient for the interaction between Race 1 and the usual hours worked is -.000014, but it is not a statistically significant value. The coefficient for the

interaction between Race 2 and the usual hours worked is -.00074, and this value is also not statistically significant.

Table 14: Group 3 Regression Interacting with Race

HDFE Linear regression — Number of obs = 178,339
Absorbing 2 HDFE groups — F(5, 7) = 1553.56
Statistics robust to heteroskedasticity — Prob > F = 0.0000
R-squared = 0.0106
Adj R-squared = 0.0105
Within R-sq. = 0.0040
Number of clusters (occ) = 8 — Root MSE = 0.3224

(Std. err. adjusted for 8 clusters in occ)

divorce	Coefficient	Robust std. err.	t	P>|t|	[95% conf.	interval]
uhrswork	-.0001953	.0001514	-1.29	0.238	-.0005532	.0001626
Race						
1	.0258386	.0070174	3.68	0.008	.0092451	.0424321
2	.1430215	.0118778	12.04	0.000	.1149348	.1711081
Race# c.uhrswork						
1	-.0000141	.0001556	-0.09	0.930	-.0003822	.0003539
2	-.0007428	.0003707	-2.00	0.085	-.0016193	.0001336
_cons	.1013093	.0066903	15.14	0.000	.0854893	.1171293

The final regression for Group 3 can be seen in **Table 15.** This regression uses the usual hours worked, sex, race and kids independent variables, and also has the highest R-squared of any of the regressions within this occupation group, with a value of 0.036. The coefficient for the usual hours worked variable is .0004. This coefficient is statistically significant at a .001 significance level, and means that on average, for every additional hour worked in a week, the divorce rate increases by 0.04 p.p.. The coefficient for the sex binary variable is .073, and is statistically significant at a .001 significance level. This represents that on average, individuals

who are women have a 7.3 p.p. higher chance of divorce. The coefficient for the kids binary variable is -.08, and this value is also statistically significant at a .001 significance level. This means that on average, individuals with kids are 8 p.p. less likely to divorce. The coefficient for Race 1 is .021, and this value is statistically significant at a .001 significance level. Race 1 represents individuals who are White, and this value therefore means that on average, White people are 2.1 p.p. more likely to have a divorce. The coefficient for Race 2 is .11, and this value is also significant at a .001 significance level. Race 2 represents people who are Black, and this value therefore means that on average, Black individuals are 11 p.p. more likely to have a divorce.

Table 15: Group 3 Regression Controlling for all Variables

HDFE Linear regression — Number of obs = 178,339
Absorbing 2 HDFE groups — F(5, 7) = 1073.17
Statistics robust to heteroskedasticity — Prob > F = 0.0000
R-squared = 0.0357
Adj R-squared = 0.0356
Within R-sq. = 0.0293
Number of clusters (occ) = 8 — Root MSE = 0.3183

(Std. err. adjusted for 8 clusters in occ)

divorce	Coefficient	Robust std. err.	t	P>|t|	[95% conf.	interval]
uhrswork	.0003985	.0000752	5.30	0.001	.0002207	.0005763
sex						
female	.0730513	.0120403	6.07	0.001	.0445806	.101522
1.kids	-.0797159	.0017305	-46.07	0.000	-.0838079	-.0756239
Race						
1	.0211889	.0032235	6.57	0.000	.0135666	.0288112
2	.109292	.0052787	20.70	0.000	.09681	.121774
_cons	.0907376	.0065037	13.95	0.000	.0753588	.1061164

The overall impact of usual hours worked on Group 3 again was marginal, and the effects of usual hours worked on divorce also varied minimally when interacted. To summarize these effects, for each additional hour worked, women are slightly more likely to get divorced than men, parents are less likely to get divorced than non-parents, and White and Black individuals are less likely to get divorced as well. Furthermore, these coefficient values and signs for the variable interaction regressions are similar to those found in Group 1 and Group 2.

V. Results Discussion

Group 1

The high-hours variable occupation group has the highest usual hours worked coefficient of any regression model, with a baseline value of -0.00088. As previously stated, this result on average translates to a 0.089% divorce increase for every additional hour worked in a week. While this coefficient value seems relatively small on its own, it's also relevant to use this value with existing occupational divorce metrics. Referring back to **Figure 1**, individuals within the high-hours variable who worked 45 or more hours per week have a 10.74% chance of divorce. To calculate the potential impact of working additional overtime hours on this divorce rate, I again used the difference in usual hours worked between Group 1 and the standard American work week. Individuals within the high-hours variable worked on average 46.5 hours per week, which can also be thought of as 6.5 more overtime hours than someone who works the standard 40-hour American workweek. Multiplying the original usual hours worked coefficient by 6.5 hours yields a value of -0.57%, which can be thought of as the average impact of overtime work on divorce for individuals within Group 1. When the value is subtracted from the existing divorce rate of 10.74%., it results in a value of 10.17%, which reflects a 5.34%. change in the overall divorce rate of individuals Group 1. Therefore, the average individual who worked 45 or more hours in a week has a 5.34% less chance of divorce within my model. While this representation of the effects of overtime work on divorce is more apparent, the percent change is still relatively low. When you also consider the R-squared value of only .0168, it suggests that while usual hours worked do impact the divorce rates of individuals within Group 1, the effects lack economic significance.

Group 2

The baseline regression for Group 2 has a coefficient on usual hours worked of -0.00028, which again on average only translates to a 0.028% decrease in the divorce rate for every additional hour worked. To better demonstrate its economic effect, this coefficient must be considered using the existing divorce rate for each occupation within the group. Each of these occupations will again juxtapose their usual hours worked against the standard 40-hour American work week to determine overtime work. The average hours worked in a week for surgeons is 51.36, and an average divorce rate of 6.89%. Multiplying this original usual hours worked coefficient by the 11.36 hours of overtime work yields a value of −0.0031888, and when applied to the existing divorce rate for surgeons, gives a divorce rate of 6.57%. Therefore, the average surgeon within my model has a 4.625% less chance of being divorced. Repeating the same set of calculations for physicians, sales managers and architectural engineering managers returned similar results. Physicians have a 1.54% less chance of being divorced on average, sales managers have a 0.4895% less chance of divorce on average, and architectural and engineering managers also have a .5716% less chance of divorce on average. Therefore, while the effect of the usual hours worked is better represented when incorporating relevant divorce metrics, the actual percent changes to divorce are low, demonstrating that the effects nevertheless are marginal.

Group 3

The baseline regression for Group 3 has the smallest coefficient on usual hours worked, with a value of -0.0002382. This value only demonstrates a decrease in divorce rates of 0.02382% for each additional hour, but this impact is better represented through the effect on the

relevant occupational divorce rates. The impact of overtime work on divorce rates in comparison to the 40-hour American work week for surgeons, physicians, sales managers and architectural and engineering managers is already demonstrated in Group 2, but Group 3 incorporates the four occupational pairs. Therefore, when calculating the effect of overtime work on the divorce rates for surgeons, physicians, sales managers and architectural and engineering managers in group 3, I will use the mirrored occupations to calculate overtime hours.

For instance, the first occupational pair in Group 3 is surgeons and dentists. As previously mentioned, surgeons have an average usual hours worked in a week of 51.36, which previously represented 11.36 hours of overtime work in group 2. However, because dentists are meant to mirror the occupational traits and salary of a surgeon, I use their average usual hours worked instead of the 40-hour American work week to determine overtime. This way, I can represent the impact of overtime work on divorce rates for surgeons in reference to the hours worked of a similar occupation in dentists. The average hours worked in a week for dentists is 34.25, which means that surgeons work an average of 17.11 more hours per week. This 17.11 is treated as overtime work, and multiplying the initial usual hours worked coefficient of -0.0002382 by 17.11 yields a value of -0.0041, which can be expressed as a percentage of -0.41%. The divorce rate among surgeons is 6.89%, and a percent decrease of .4077402% means that on average, the additional 17.11 hours of overtime work results in surgeons having a 5.9% less chance of divorce. These calculations are repeated for each additional occupational pair. Overtime hours used in measuring the effect on divorce rates for physicians were calculated using the difference in hours worked by pharmacists, sales managers were calculated using the hours difference in marketing managers and architectural and engineering managers were calculated using the hours difference in financial managers. Ultimately, physicians are 2.9674%

less likely to divorce, sales managers are 0.691% less likely to divorce, and architectural and engineering managers are 0.7146% less likely to divorce, when overtime hours are determined using their respective occupational pairs. While some of these effects are more observable, such as surgeons, this is primarily because their usual overtime hours are much greater than other occupations. It highlights that the effect of usual hours worked in a week on divorce rates does exist at elevated overtime hours, but their effect is minimal on a per-hour basis.

One final aspect of the Group 3 results that is important to note is the coefficient sign for the final regression run. As shown in **Table 15**, the coefficient value for the final regression run controlling for all independent variables yielded a value of approximately .0004, and this was one of the only positive coefficients within my study. Group 3 is the most complete occupational group I tested, because the inclusion of low-hour occupations helps provide a more nuanced understanding of the relationship between weekly work hours and divorce. Therefore, the positive coefficient signs suggest that once I controlled for factors which impact hours worked and work-life balance– such as sex and children – I was able to correctly hypothesize the direction of effect within my most comprehensive model.

Coefficient Signs & Initial Hypotheses

The last important aspect of the results to analyze are the coefficient signs, and how these values align with my initial hypotheses. The majority of the usual hours worked coefficients were negative, as 10/15 coefficients indicated that an increase in hours led to a decrease in divorce rates. I initially hypothesized that an increase in overtime work would be associated with an increase in divorce rates, and I wanted to test how this varied by sex, race and parental status.

This initial prediction is largely wrong, as although the effects of the usual hours worked on divorce are marginal, it still indicates a minimal negative relationship. I hypothesized that the usual hours worked and divorce rates would have a positive relationship because of the impact that spending time with a partner has on relationships. As discussed in my literature review, social participation and stable time spent at home can be very important to maintaining a relationship, and thus I predicted that when this time away from work is disrupted, it will negatively impact divorce rates (Presser, 2004). However, the coefficient values being largely negative indicates a different relationship than I previously considered. It potentially suggests that the financial benefits and job stability provided by high-income, high-hours occupations may be even more impactful to a marriage than time spent together. Financial and occupational security in a relationship may reduce stress and potential tension between partners caused by monetary issues, and thus has a greater influence on divorce than time spent together.

Regardless, the minor coefficient values and the low R-squared for each regression indicate that there are many other key factors that affect the divorce rate besides just the usual hours worked by individuals. Therefore, while the coefficient values suggest a primarily negative relationship between overtime work and divorce rates, this relationship is minimal and needs to be explored through continued research.

Limitations

The primary limitation of my model is the inability to prove causality without exogenous variation. Initially, I wanted to use a form of overtime policy variation as the basis for testing its impact on divorce rates, because it acts as an external factor. However, because overtime work is federally mandated, there is no policy that could act as an exogenous variation, meaning that I

cannot completely rule out occupational selection effects. The reason why an individual chooses occupation A versus occupation B relies on several different factors unique to the individual and their circumstances, and many of these reasons cannot be represented or controlled within my regressions. Additionally, these same factors could influence divorce rates as well. The same reasons that an individual is able to work job A instead of job B could be the same reasons that determine if that same individual is more or less likely to divorce. My model tries to control for these unobservables constant with occupation through the use of fixed effects and by using jobs within related fields, but the variation will inevitably still exist within my model. Therefore, I cannot completely test for causality.

Moreover, my model is limited based on the data and reporting metrics available. The key independent variable in my research is the usual hours worked by individuals, which is a self-reported statistic. Depending on how these hours are reported, the usual hours worked may not accurately reflect an individual's actual hours worked, leading to potential measurement error. The occupations I specifically use within my research were also limited based on the occupational codes which determined them. The American Community Survey includes 570 occupation codes, which are meant to designate every potential job a participant in the survey could work. While some of these occupational codes allow for occupational precision, such as the medical field, where there are 42 different job types listed, some fields are not as well represented. For instance, there are no specific occupational codes for high-earning, high-working-hours positions like bankers, who are instead included in a broad occupation titled "Financial and investment analysts." This occupational category likely includes several different finance jobs, and thus skews the income and hours worked reported within the data reported for this occupation. Having additional occupation codes for key jobs like investment bankers or

attorneys would have improved the precious of my estimates and the model itself, and likely would have led to additional occupations being included in the study.

Future Research

While the economic effect of my findings have been minimal, I believe that more refined research in the future could present better results. If a form of overtime policy is ever introduced across occupations, the true impact of overtime work on divorce rates would be better represented through continued research. Additionally, results could be improved using the fixed effects model with increased occupational specificity. My occupational groups were limited to the occupational codes within the ACS, but this could be changed in future studies. If there was data with a better representation of the high-income, high-hours jobs in the occupation codes, it would make results more accurate and better concentrated around the high-income aspect of the study. Lastly, if an actual overtime variable existed across data sets, that would improve future research. The usual hours worked in a week is a feasible way to represent overtime hours, but an actual variable that measured explicitly weekly overtime work by individuals would improve accuracy and concentration within the fixed effects model.

VI. Conclusion

The necessary balance between work and life has always been difficult to find, and that challenge is only heightened when the hours of a job begin to infringe on familial responsibilities. The resulting work-family conflict is a reality for many Americans, and my thesis aimed to study the factors that contribute to disrupting the existing equilibrium. This research explored how overtime work hours affect marital stability by examining the impact of extended work hours on divorce rates. I hypothesized that increased overtime work would lead to increased divorce rates because the additional working time would diminish crucial time spent engaging in social participation and overall family activity. While my results don't necessarily support my initial predictions, I think they shed light on the complicated nature of relationships. Many of the key factors which ultimately determine the success of one relationship compared to another are unique to each individual, and are not so easily explained by just one variable.

My results were ultimately marginal, but I hoped to have provided quantitative results about the impact of overtime work on divorce at elevated income levels, as it is a sparse field of study. The largely negative coefficient signs indicated a negative relationship between work hours and divorce rates, which challenges the ideas conveyed within my literature review. As a result, I hope research on this topic is continued so that the impact of overtime work on marital stability can be better understood in the future, along with the other factors that influence divorce.

VII. References

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