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The Effects of Marital Status & Gender on Health Care Insurance Coverage in the United States

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ABSTRACT

Having health insurance is a crucial factor for many to sustain life in America. This study examines the demographic determinants of health care coverage within the United States with a focus on how gender and marital status influence the likelihood of having health insurance. Using the human capital theory and the theory of statistical discrimination, it is predicted that married females will have a higher probability of being insured than divorced and separated females. Also, divorced males are predicted to have a higher probability of coverage than divorced females. The data for this research is retrieved from the United States Census Bureau Current Population Survey and consists of a large sample of adults aged 30 to 65. An OLS and probit regression are used to conduct this study, as well as descriptive statistics. The principle finding is that married adults have a much higher probability of having insurance than single, divorced, and widowed adults. It is also found that men and women do not differ greatly in their likelihood of having health insurance. One exception is that single, divorced and widowed women are somewhat less likely to have employer provided insurance than their male counterparts.

I. Introduction

The American health care system is the most expensive in the world, based on health expenditures per capita and on total expenditures as a percentage of gross domestic product (GDP) (Bodenheimer, 2005). At the same time, many Americans remain uninsured for health care coverage. The rising costs of health care in today's economy have created an even larger problem for this growing pool of uninsured individuals. According to the U.S. Census, 46.3 million individuals were reported to have been uninsured in 2008 alone. This uninsured population has been found to be associated with as many as 44,749 deaths per year, which is more than those caused by kidney disease alone (Wilper, 2009). Our nation has recently made large steps for improving our health care coverage rates, as a major health care reform bill has been signed into law which vastly expands coverage (Health Reform, 2010). However, many opponents of the law

will seek repeal of the law, which would essentially return health insurance coverage patterns to what they were before passage. Because of the uncertainty of the reform bill's future, this study will be based on coverage prior to the current reform bill. As congressional representatives continue to deliberate on how to improve the health care system, it is important to discover the characteristics of individuals that cannot attain insurance. By showing that some groups have a much lower probability of having health insurance than other groups, the results of this study help give statistical support for moving closer to creating a universal health insurance coverage that will lead to greater equality of health care across different groups.

The primary motive of this research is to explore the demographic determinants of health insurance coverage within the United States prior to the passage of The Patient Protection and Affordable Care Act that was signed into law by President Obama on March 23, 2010 (Health Reform, 2010). Of these determinants, marital status and gender are two variables largely discussed in relation to the probability of having health insurance. First, combined public and private insurance coverage are analyzed. A second model looks at coverage based on private, employer-sponsored insurance. By analyzing how gender and marital status affect the probability of having insurance, we can better compare the equity of insurance coverage between these groups. For example, it is hypothesized that divorced males will have a higher probability of coverage than divorced women. This is expected because of patterns of spousal coverage prior to the divorce. The Agency for Healthcare Research and Quality (AHRQ) states that employees who enroll for insurance tend to be male, work full time and provide spousal coverage (U.S. Department of Health & Human Services, 2010). This implies that men are more

likely to retain coverage in the event of divorce. The interactions of these two variables (marital status and gender) are predicted to have large effects on an individual's health care coverage.

While there are several theories that have been used to explain the likelihood of health insurance coverage, the human capital theory and the theory of statistical discrimination create a logical framework for this particular research**.** Under my application of human capital theory, health care coverage is education based. As educational attainment increases, so does the productivity of the person. This will lead to a higher paying job, as the individual has increased his/her skills. Thus, an employer with employees with higher skills will be more willing to provide health care insurance in order to attract and retain them.

Employer statistical discrimination is another theoretical reason to expect some groups to have lower probabilities for insurance coverage relative to other groups. Statistical discrimination exists when employers use perceptions of group performance to make judgments about the performance of individuals (Blau, Ferber and Winkler, 2006). A hypothetical example may have an employer trying to choose between two potential workers, either a single male who has earned his bachelor's degree or a married male who has earned his master's degree. While the latter may be at a higher human capital level relative to the first candidate, he may accumulate large health care costs, given he has many children to care for. When concerned about costs, the employer may still choose to hire the lesser human capital candidate because the employer believes that married men with families have higher health care costs than single men on average. Such a scenario may be identified as statistical discrimination because it is based on

group averages. Statistical discrimination in this context is when employers use information about group performance to make inferences about individual health care costs.

Both of these theories, human capital and statistical discrimination, will provide the theoretical framework for my study. The implications of uninsured individuals under the human capital theory and statistical discrimination will be further analyzed in Section III.

II. Literature Review

The large number of studies regarding the effect of demographics on the probability of health care reveals the importance of this issue to the United States. However, of this research there is a limited amount that focuses on the effects that marital status and gender have on a person's health insurance status. The empirical studies that are discussed below give reason to further investigate this issue by exploring demographic determinants of health care coverage. Two of these studies focus on the effect of gender and marital status on health insurance coverage.

Wellington and Cobb-Clark (2000) focus their study on spousal coverage in relationship to labor supply. They find that labor force participation is closely linked to individual insurance and spousal coverage. The authors note the importance of analyzing the labor market in relationship to insurance, as 80% of insured Americans obtained a coverage plan through their employer in the year 1989. This shows that Americans have relied on employer support for health care assistance for many years. Wellington and Cobb-Clark's findings give great support for using a model with only employer-sponsored insurance in my study. However, the results in my study show that insurance

other than employer-provided help to lessen the disadvantage of being unmarried for females.

A few studies also examine some dimensions of the relationship of health insurance to marital status and gender (Buchmueller 1996, Chi- Wen Li 1996, Zimmer 2007). Zimmer looks at the insurance implications of a married individual losing his or her spouse. The author notes the Consolidated Omnibus Budget Reconciliation Act of 1985 (COBRA), which attempts to protect people from experiencing employment termination from the possibility of losing employer-provided insurance. The study uses data from the MEPS, a nationally representative survey of health care utilization and insurance status. The results show that people who separate have a larger risk of insurance loss than people that remain married. The idea of "marital lock" is discussed, such that spouses who might be better off ending an unhealthy marriage will stay legally bonded for fear of losing their health insurance. While Zimmer's study only focuses on employed married individuals, I examine the influence of marital status for married, single, divorced, and widowed respondents on health insurance status.

Pollack and Kronebusch (2004) explore health insurance for a "vulnerable population." The paper defines this group as a group in need, facing significant economic disadvantages (like low income and poor health), having impaired decision making, or enduring discrimination. They find that vulnerability and health insurance coverage are closely linked; the majority of people who are uninsured face obstacles in obtaining it rather than being uninsured by choice. This vulnerable population has readily identifiable medical or social needs that limit their access to health insurance. In the study, a common multivariate approach is used to examine the effects on health insurance coverage by

estimating a logit specification. The independent variables are location, education attainment, race/ethnicity, health, income, and marital status with the dependent variable being health insurance coverage. Pollack and Kronebusch's research has great similarities to this paper's study, as it uses some demographic inputs to find the probability of being insured. The authors' findings demonstrate that demographics are a large uncontrollable factor that affects a person's coverage status.

A working paper study by Thomas C. Buchmueller (2005) is concerned with the issue of the impact of immigration status on health care coverage. Buchmueller finds there to be a lower rate of employer-sponsored health insurance coverage for foreign-born workers, and to investigate the underlying factors of this occurrence he uses a probit regression. He estimates the probabilities of working for a firm that offers coverage, being eligible for coverage, and taking up coverage. He finds the differences between native-born and naturalized citizens to be very small for some outcomes. The gaps between non-citizens and natives is from the differences in the probability of working for a firm that offers insurance, revealing a job structure affect on health insurance status. The overall finding was that the higher rate of no insurance among immigrants is driven by a lower rate of health insurance offered by employers of immigrants. According to the 2002 Survey of Income and Program Participation (SIPP), adults born outside of the U.S. are nearly three times as likely to be uninsured as native-born U.S. citizens. This gives support for why nativity status and job structure should be considered within my study.

Angel, Frias and Hill (2005) examine the correlation of health insurance coverage for low-income households using data from Boston, Chicago and San Antonio. They find that being poorly-educated, an immigrant and of Mexican-origin increase the risk of

incomplete household coverage. The paper notes that state policy may have an impact on the results from each city. In addition, the researchers find that there is a marriage penalty for family health insurance coverage for two of the cities. This gives reason to include family structure into the empirical model. This is an important study to refer to, as I hypothesize the opposite effect for marital status in determining health insurance coverage.

A common element of the studies reviewed in this section is that human capital and health care coverage are highly correlated. For example, Buchmueller (2005) note that "foreign-born citizens and non-citizens are likely to differ in terms of other aspects of human capital that we cannot measure, such as English fluency and education quality." The vulnerable groups, mentioned by Pollack and Kronebusch (2004), in many aspects may increase their chance at having health insurance coverage if their education or English language proficiency are to increase. For example, economic disadvantages will decrease by increasing income because a person is more capable to afford a higher education, which may in turn lead to a higher knowledge basis on how to care for his/her immune system. The study by Angel, Frias and Hill (2005) only goes as far as to study education levels of less than high school and high school or equivalent. However, they also find education to be of great importance on the insurance coverage for individuals. These studies provide external support for my decision to use a-theoretical framework of human capital and to include measures of human capital in the regression equations.

III. Theory

The human capital theory and the theory of statistical discrimination create a suitable conceptual framework for this health care research (Blau, Ferber and Winkler,

2006). Together they help to make clear why the probability of insurance for each demographic group may vary. The human capital theory reasons that as individuals increase their education, their productivity increases and there is a higher chance at obtaining a job with a larger income. This will then increase their chance at being offered a health care plan by their employer. Since employers value those with higher education over those with lesser skills, it will be in their best interest to maintain a worker's health. Also, highly educated workers with good incomes can also afford to purchase their own insurance in instances where the employer does not provide it.

Gender may affect the probability that an individual will have health care insurance and it is hypothesized that women will be less likely to be covered by health insurance. One reason to expect this is that women are more likely than men to be employed part-time for maternity issues and child-care responsibilities. If women have lower levels of human capital because of less on-the-job training associated with continuous work experience, they are not as likely as men to be eligible for employer sponsored health insurance. Also, women may be adversely affected, as part-time employees are less likely to have employer-sponsored health insurance and may not be as permanent of a job in comparison to full-time positions. In other words, employed women are more likely to be in the types of jobs that are unlikely to provide insurance, like part-time and self-employed positions.

Finally, women may be more likely to be subjected to statistical discrimination than men in the health insurance market. For example, if women are more likely to make insurance claims related to the birth of their children, employers may favor men in positions that offer full health insurance benefits. Although it is illegal for an employer

to discriminate based on family size and dependents, it is a hard action to police. Also, while it is illegal to ask information on the amount of children one cares for, this information can be obtained from casual conversations and regular interactions. Since many hiring managers are untrained on what is unlawful to ask at an interview and is it common for these inappropriate questions on marital status and family size to come up (Washington, 2010).

I also hypothesize that marital status is related to the probability of obtaining health insurance. Divorced and widowed people, for example, are hypothesized to be less likely to have health insurance. First, the absence of a spouse means that they are unlikely to be employed through the coverage provided through the employer of another family member. Second, divorced or widowed individuals who have dependents may not be employed in the type of full-time positions that are likely to offer health insurance. Married individuals, on the other hand, are more likely to have at least one spouse who "specializes" on full-time work. This full-time working spouse, then, is likely to be eligible for health care benefits that cover the entire family. Gary Becker's theory of the family which is based on human capital ideas suggests this type of specialization within the family (Blau, Ferber and Winkler, 2006). Therefore, it is hypothesized that married persons would be more likely to have insurance than divorced or widowed individuals. It is not clear, a priori, what the effect of being single is on the probability of having health insurance. Single people cannot fall under the coverage of another household member, thus, decreasing their likelihood of coverage. On the other hand, not having coverage may give the single individual motivation to be a more productive worker.

Also, employers may "statistically" favor single workers since they are unlikely to present large health care claims that often are made by large families.

It is also hypothesize that there is a significant interaction between gender and marital status in the determination of the probability of having health insurance. For example, divorced women may be at a significant disadvantage in obtaining health insurance compared to divorced men. This is because divorced women are more likely to have direct responsibility over dependent children than divorced men (Coleman and Ganong, 1992). Because of these family responsibilities, divorced women are less likely than divorced men to be employed in full-time jobs that offer health insurance. Therefore, it is hypothesized that there is a significant interaction between marital status and gender in the determination of health insurance coverage. The interaction between gender and marital status and how it is modeled is further discussed in section V.

Spousal coverage can also be a determining factor for health care coverage, in the event that marital status changes. In the situation that a respondent who relies on spousal coverage gets a divorce, the respondent will try to now obtain insurance as a divorced individual. However, the divorced respondent is less likely to obtain coverage, as the divorced respondent's human capital level may be lower than average. Having had reliance on the ex-spouse's health care plan, the respondent may not have had the motivation to increase their own human capital by furthering their educational level and obtaining a more productive job. As an insurer prefers an individual with high human capital, the divorced respondent now may have a lesser chance at obtaining a health care policy. As labor statistics have noted, married females are more likely to be insured under

a spouse's policy, and not vice versa (U.S. Department of Health & Human Services, 2010). Thus, females may be more affected from a marital status change than men.

Another current issue within the workplace is sexual pay discrimination. Many studies, one conducted by Blau and Kahn (2000), now claim that the gender pay gap has narrowed dramatically. This will make it more likely to obtain health insurance for women than in the past. However, it may remain that females have somewhat less human capital than males in the work force because of less on-the-job training due to fewer full-time years in the work force. This being the case, it will be more challenging for women to purchase a health care insurance plan if their income is smaller.

The literature discussed in Section II suggests a number of additional demographic factors that can influence the likelihood of obtaining health insurance. While the focus of my study is on the influence of gender and marital status on the probability of having health insurance, these other factors are important and many of them are included as control variables in my empirical model. For example race and ethnicity have been shown to be important. For different race/ethnic groups, there are some barriers to obtaining health care insurance. For example, Hispanics in America may have a larger language deficiency, as noted earlier in Buchmueller's study, which lowers their chances of being employed in an English-speaking community. This also applies to many non-Hispanic foreign-born individuals who do not speak English. This decreases their access to employer provided health insurance. The smaller working populations for these groups are shown in Table 1, which reports the third quarterly unemployment rates in 2009 (Bureau of Labor Statistics).

TABLE 1
Unemployment Rates: Quarterly Averages for the third quarter in 2009

Category	Unemployment Rate
All Workers	9.6
Adult Men	10.1
Adult Women	7.7
Teenagers	25.1
White	8.8
Black/African American	15
Hispanic/Latino	12.7

Note: Terms are in percentages. Source—U.S. Department of Labor, Bureau of Labor Statistics.

For white individuals in the labor force, there is an unemployment rate of 8.8% during the third quarter in 2009. In comparison to this, the Hispanic and black unemployment rates are much higher at 12.7% and 15.0% (Bureau of Labor Statistics, 2009). Many factors can cause this difference including education attainment and income levels (lower human capital). The job status of an individual must be taken into consideration when determining the likelihood an individual has health insurance coverage. The present labor statistics show fewer minorities employed, thus minority groups such as blacks and Hispanics will have a lesser chance at obtaining employer-provided insurance and will find it more challenging to afford a policy with little to no income available.

In conclusion, on the basis of the above theoretical considerations and literature review, I hypothesize that the probability of having health care coverage will be greater for men than for women and for people who are married than for those who are not. In addition, I hypothesize that divorced men should have significantly higher rates of coverage than divorced women. Empirical models to test these hypotheses are developed in the next section.

IV. Data and Empirical Model

a) Dataset

The data for this research is retrieved from the United States Census Bureau for the Bureau of Labor Statistics using the Current Population Survey (CPS) for 2009 by using IPUMS retrieval system. The sample size of the data consists of 96,395 individuals. For the regression, health care insurance coverage is used as the dependent variable, with the previously mentioned demographic determinants as independent variables (Also, refer to Table 2 below). This study focuses only on working-age individuals, ranging from age 30 to 65, who have most likely finished school. I assume that for the majority the schooling process ends by age 30. The cut-off age is 65, as individuals who are 65+ qualify for Medicare coverage (Medicare, 2009).

b) Demographics & Empirical Model

In this study, both OLS regressions and probit are used to analyze health care coverage. Dummy variables are used for all variables. The independent and dependent variables are discussed below and a summary of definitions is found in Table 2. Both models predict having health care insurance as a function of several variables.

Gender: Gender is an independent variable, with females being compared against the output group of males. Gender is equal to 1 if the respondent is female and 0 if the respondent is male.

Marital Status: Marital status is an independent variable, broken up into separate dummy variables for single, divorced and widowed. The reference group is married respondents.

Gender and Marital Status Interactions: The interaction variables are INTERfemale_s, INTERfemale_wid, and INTERfemale_div. These variables equal 1 for females that are either single, widowed, or divorced. These variables are included to see if gender interacts with marital status to determine the probability of health care coverage.

Health care coverage: Health insurance is the dependent variable. However, for Model 1 and 2, health care coverage is defined differently. For Model 1, insurance is defined as a dummy variable indicating whether the respondent is covered by either a public and/or private plan (ANYHEALTH). For Model 2 coverage is defined as a dummy variable indicating whether the respondent is covered by employer-sponsored health care coverage (ANYEMPLOY). Public insurance includes government policies such as Medicaid, Medicare, Indian Health Service (for eligible American Indians), Civilian Health and Medical Program of the Uniformed Services (CHAMPUS), Veterans Administration (VA), and other military health care. Private insurance includes employer-sponsored or privately purchased, non-government policies. Those that are themselves policyholders, as well as dependents covered by such policies are considered covered. The model also considers those that are under a spouse's policy as covered. However, both variables do not treat respondents with coverage provided by the policy of someone living outside the household as covered by insurance in this particular study.

Two models are used to determine health care coverage. The basic model used for the regressions is as follows.

Model: $$\text{Health Care} = \beta_0 + \beta_1(\text{female}) + \beta_2(\text{single}) + \beta_3(\text{divorced}) + \beta_4(\text{widowed}) + \beta_5(\text{INTERfemale\_s}) + \beta_6(\text{INTERfemale\_div}) + \beta_7(\text{INTERfemale\_wid}) + \beta_8(\text{Asian}) + \beta_9(\text{Black}) + \beta_9(\text{Hispanic}) + \beta_{10}(\text{Multirace}) + \beta_{11}(\text{NativAmer}) + \beta_{12}(\text{NonCit}) + \beta_{13}(\text{ForBornCit}) + \beta_{14}(\text{Unemploy}) + \beta_{15}(\text{Employ}) + \beta_{16}(\text{Highgrad}) + \beta_{17}(\text{Somecol}) + \beta_{18}(\text{Colgrad}) + \beta_{19}(\text{Child5}) + \beta_{20}(\text{Poorhlth}) + \mu$$

Model 1 focuses on the demographic propositions for what may affect having any type of health care coverage (ANYHEALTH). The dependent variable is a dummy variable that assumes the value of one if the respondent has health insurance and is zero otherwise. The independent variables are dummy variables that measure various demographics, including gender and marital status.

Model 2 predicts whether respondents have employer sponsored insurance (ANYEMPLOY). The dependent variable is a dummy variable that assumes the value of one if the respondent has health insurance through an employer and is zero otherwise. The independent variables are the same as those in Model 1. The only difference between Model 2 from Model 1 is the dependent variable, where health care insurance is any type of insurance in Model 1 and only employer-sponsored insurance in Model 2.

The control variables include race/ethnicity, education, nativity (place of origin) of U.S. citizens and non-citizens, employment status, family structure and health status and are described below.

Race/Ethnicity: Race and ethnicity are treated as independent variables. Separate dummy variables are defined for black, Asian, Hispanic, Native Americans (NativAmer) and multiple race (Multirace) respondents. The reference group for these variables is non-Hispanic white.

Foreign Born Non-Citizen: Foreign born non-citizen is an independent variable. It is a dummy variable that is defined with value of 1 if the respondent is a non-citizen and 0 if a naturalized citizen (NonCit).

Foreign Born Citizen: Foreign born citizen is a dummy variable that is 1 if the respondent is a foreign born U.S. citizen and 0 if a naturalized citizen (ForBornCit). Foreign born is

treated as persons born in outlying United States territories and those born abroad to American parents thus are still considered U.S. citizens.

TABLE 2
Variables and Descriptions

Variable	Description	Omitted/Comparison Group (-)
Dependent		
ANYHEALTH	Dummy variable for health care; 1 if respondent has any public or private health insurance, 0 if respondent has no form of health insurance	N/A
ANYEMPLOY	Dummy variable for health care; 1 if respondent has employer-sponsored insurance, 0 if respondent has no employer-sponsored insurance	N/A
Independent		
Female	Gender	Males
Single	Marital Status; Single	Married
Divorced	Marital Status; Divorced	Married
Widowed	Marital Status; Widowed	Married
INTERfemale_s	Interaction Variable; Female*Single	Those not Female & Single
INTERfemale_div	Interaction Variable; Female*Divorced	Those not Female & Divorced
INTERfemale_wid	Interaction Variable; Female*Widowed	Those not Female & Widowed
Asian	Race; Asian or Pacific Islander	Non-Hispanic White
Black	Race: Black	Non-Hispanic White
Hispanic	Ethnicity; Mexican, Puerto Rican, Cuban or other Spanish	Non-Hispanic White
Multirace	Race; Two or more races	Non-Hispanic White
NativAmer	Race; American Indian, Aleut or Eskimo	Non-Hispanic White
NonCit	Not a U.S. Citizen	Naturalized U.S. Citizen
ForBornCit	Foreign born and a U.S. Citizen	Naturalized U.S. Citizen
Unemploy	Employment; Unemployed experienced worker or unemployed new worker	Not in Labor Force
Employ	Employment; Has a job or Armed Forces	Not in Labor Force
Highgrad	Education; Earned a High school diploma	No High School Diploma
Somecol	Education; Some college education but no degree earned	No High School Diploma
Colgrad	Education; Earned a college degree	No High School Diploma
Child5	Family Structure; individuals with kid(s) under the age of five	No children under age 5
Poorhlth	Health status; Fair or poor health	Excellent, Very Good or Good

Employment Status: Employment status is proxied with two dummy variables: one for employed individuals (Employ) and the other for unemployed individuals (Unemploy). The reference group includes those who are not in the labor force. Those not in the labor force are defined as those not seeking work and may include persons doing housework, persons that are in school, unpaid work (or working less than 15 hours), unable to work, or other. Respondents that are in the Armed Forces are considered employed individuals. Those that did at least 15 hours of work without pay in a family business/farm are classified as working.

Education: Education is an independent variable. The groups are divided between high school graduate (Highgrad), some college education (Somecol), and college graduate (Colgrad). These groups will be compared against those that do not have a high school diploma.

Family Structure: Family structure is a dummy variable that looks to see whether there are children under the age of five under one household or not. The variable Child5 has the value of 1 if a respondent has 1-6 children under the age of 5 (no respondents listed more than 6 children under this category). The comparison group is respondents with zero children under the age of five.

Health Status: One additional independent variable (aside from the demographics) that is added to the empirical model is health status. Respondents define their health as being excellent, very good, good, fair or poor. For this study we will use a dummy variable to determine an individual's state of health (Poorhlth). A value of 1 refers to a person's health being fair or poor. The comparison group is then excellent, very good or good.

Health status is hypothesized to have a positive coefficient, such that an individual at a higher state of health has a greater chance at obtaining health care coverage.

Many researchers argue for the importance of a person's health in regards to obtaining health insurance (Carroll 2006, Dushi 2005, Monheit 2000). As an individual with pre-existing conditions wishes to obtain coverage, the insurer may statistically discriminate against the individual trying to obtain coverage, as the insurer may view the individual to have higher health care costs and has an incentive to not provide coverage. This shows the insurer and the individual that is trying to obtain insurance acting in opposite directions. Such cases are no longer acceptable under the current law. Since the recent health care legislation was signed into law in March 2010, uninsured citizens with pre-existing conditions now have access to a more affordable insurance, from what is called a high-risk pool. This is temporary until the year 2014 when insurance companies can no longer deny coverage to anyone based on their health (Health Reform, 2010). However, as data was retrieved from the year 2009, it is still imperative to consider these situations. In addition, there are both human capital and statistical discrimination implications related to health status. For example, if a carpenter becomes paralyzed from the waist-down, her level of human capital has now decreased due to a disability. This may lower her ability to be employed and to obtain an employer-sponsored insurance plan. If the carpenter loses her income, it is now more difficult to afford a privately-purchased policy.

However, there are limitations to the health status variable that should be recognized. It must be considered that excellent, very good, good, fair and poor are relative terms that are not specifically defined. These terms are based on the respondent's

own definition of what each of these mean, which may differ from what an insurer may define them as. Additionally, health status is weighted at different levels for different occupations. So if person A is a disabled carpenter but person B is a disabled typist, being paralyzed from the waist-down may have larger consequences on person A's career than person B. Health status is an important variable that affects demographic determinants of health insurance and the probability of health care coverage. At the same time, we must take into account their restrictions when analyzing the results.

V. Results

The following table (Table 3) presents summary statistics that show the proportion of those with insurance coverage for each demographic group. Considering the entire sample, Gender and marital status are divided into subsections. An important observation is that married respondents have a much higher proportion insured (88.2%) than the other three marital statuses, with single at 71.9%, divorced at 77.5%, and widowed at 79.8%. Also, there appears to be little difference between men and women across the various categories of marital status. Contrary to expectations, even divorced women have about the same insurance coverage as the entire population of divorced individuals. One interesting observation from Table 3 is that most insured married individuals have insurance that is provided by private insurers while a much smaller percentage of insured single, divorced and widowed individuals receive their insurance from employers.

Table 3 also shows a few interesting findings from the control variables that are not the central focus of this study. For example, there are low coverage percentages for Hispanic, Native American, non-citizen and poor health respondents. Table 3 also shows

TABLE 3
Summary Statistics: Population Size & Percentage Covered by Health Insurance

Variables	Percentage of Total Population	Percentage Insured (Any Health Insurance)	Percentage Insured (Employer Insurance)
Married	69.46%	88.23%	76.25%
Single	15.83%	71.91%	49.19%
Divorced	12.44%	77.51%	56.26%
Widowed	2.27%	79.77%	45.36%
Male	47.95%	83.38%	69.38%
Female	52.05%	84.81%	68.22%
Female & Married	34.82%	88.45%	76.13%
Female & Single	8.08%	75.59%	50.35%
Female & Divorced	7.34%	78.90%	56.51%
Female & Widowed	1.80%	79.87%	44.34%
Asian	5.22%	83.40%	70.19%
Black	11.28%	80.79%	60.32%
Hispanic	14.77%	65.28%	49.64%
Multi-Race	1.79%	82.35%	66.26%
Native American	1.32%	62.28%	42.44%
Non-Citizen	9.22%	58.19%	44.03%
Foreign Born Citizen	18.39%	69.71%	54.64%
Unemployed	5.54%	66.21%	50.44%
Employed	73.51%	86.58%	77.51%
High School Graduate	29.33%	79.99%	62.92%
Some College	17.22%	85.62%	69.54%
College Graduate	42.28%	92.44%	81.69%
Individuals with kids under 5 years old	14.03%	86.56%	74.08%
Poor Health	13.11%	80.19%	40.87%

that the likelihood of having insurance goes up as the level of educational attainment increases. Respondents with poor health have much lower probability of obtaining employer sponsored insurance than those with better health. Finally, the percentage of

insured respondents with poor health doubles when all health insurance is then considered. This indicates an advantage to offering other insurance policies to society besides those policies provided only by employers.

Two linear probability OLS regression models are reported in Table 4. The models differ only in the dependent variable. The first predicts the probability of having any type of health insurance (ANYHEALTH) while the second predicts the probability of having employer provided insurance (ANYEMPLOY). Marginal effects probit models were also run to check the robustness of the OLS regression results. Since the two techniques produce a very similar pattern of results, only the OLS linear probability results are presented here. The regression results show many statistically significant coefficients, but they do not all support the research hypotheses of the paper.

For example, in the theory section it is hypothesized that women are less likely to have health insurance than men. However, the Model 1 results show that although the dummy variable FEMALE is statistically significant, it is very small and has the wrong sign. Furthermore, none of the interactions involving gender are significant. Therefore, being female does not seem to have a negative effect on obtaining insurance as expected. This conclusion also seems to be supported by Model 2 which predicts the probability of obtaining employer offered insurance. However, the interaction variables are negative and statistically significant suggesting that single, divorced and widowed women may be at a disadvantage in obtaining employer sponsored insurance relative to their male counterparts.

The regression results produce strong support for the hypothesis that married people should have a higher probability of having insurance. The coefficients to all of

TABLE 4

Regression Results: Model 1 predicts any health insurance coverage and Model 2 predicts employer-sponsored insurance coverage (Standard Errors in Parentheses)

Variable	OLS Model 1 (Any Insurance)		OLS Model 2 (Employer Insurance)	
Constant	0.752 ***	(0.005)	0.381 ***	(0.006)
Marital Status				
Single	-0.131 ***	(0.004)	-0.152 ***	(0.005)
Divorced	-0.107 ***	(0.005)	-0.138 ***	(0.006)
Widowed	-0.055 ***	(0.016)	-0.142 ***	(0.019)
Gender				
Female	0.01 ***	(0.003)	0.045 ***	(0.003)
Interactions				
INTERfemale_s	0.006	(0.005)	-0.0997 ***	(0.007)
INTERfemale_div	0.01	(0.007)	-0.057 ***	(0.008)
INTERfemale_wid	-0.0003	(0.018)	-0.072 ***	(0.022)
Control Variables				
Asian	0.008	(0.006)	0.019 ***	(0.007)
Black	-0.018 ***	(0.004)	-0.016 ***	(0.004)
Hispanic	-0.09 ***	(0.004)	-0.059 ***	(0.005)
Multirace	-0.011	(0.008)	0.012	(0.010)
NativAmer	-0.174 ***	(0.010)	-0.162 ***	(0.012)
NonCit	-0.165 ***	(0.005)	-0.128 ***	(0.006)
ForBornCit	-0.031 ***	(0.004)	-0.047 ***	(0.005)
Unemploy	-0.114 ***	(0.005)	0.074 ***	(0.006)
Employ	0.028 ***	(0.003)	0.255 ***	(0.004)
Highgrad	0.096 ***	(0.004)	0.154 ***	(0.005)
Colgrad	0.196 ***	(0.004)	0.276 ***	(0.005)
Somecol	0.141 ***	(0.005)	0.2 ***	(0.005)
Child5	0.003	(0.003)	-0.008 **	(0.004)
Poorhlth	0.023 ***	(0.004)	-0.134 ***	(0.004)
Sample Size	96,395		96,395	
R - squared	0.1379		0.2259	

*** Denotes significance at α = .01

** Denotes significance at α = .05

* Denotes significance at α = .10

the marital status variables (single, divorced and widowed) are negative and large. This suggests that being single, divorced or widowed substantially lowers one's probability of having insurance. These effects are strongest in predicting the probability of having employer provided insurance (Model 2).

In order to observe the differences between the various gender and marital status groups, simulations are performed. Table 5 presents the probability of coverage for each group. To do the simulations we assume the individuals are employed white college graduates who are citizens born in the United States that have good health status and to not have children under the age of 5. Simulations are done separately for eight groups regarding gender and marital status. The first column of probabilities are for employer-sponsored insurance and the secondly column is for any health insurance. Counter to my hypothesis, the results show that gender does not have a large impact on the likelihood on having health insurance. For example, divorced men have a 77.4% probability of having employer-sponsored coverage while divorced women have a 76.2% probability of employer-sponsored insurance. Married women are actually more likely than married men to have employer-sponsored insurance. The regression results thus provide no support for the hypothesis that divorced women should have a lower probability relative to divorced men to hold employer provided insurance.

Still, there remains a larger difference between married and unmarried persons. While the probability to have employer-sponsored insurance for unmarried persons range between 70-78%, married persons have a higher probability, ranging between 91-98%. When any health care coverage is considered, the gap between married and unmarried persons is much smaller.

Table 5

Estimated Probabilities of Having Insurance by Gender and Marital Status*

Group	Probability of Employer Sponsored Health Insurance	Probability of Any Health Insurance
Married Men	91.2%	97.6%
Maried Women	95.7%	98.6%
Divorced Men	77.4%	86.9%
Divorced Women	76.2%	88.9%
Single Men	76.0%	84.5%
Single Women	70.5%	86.1%
Widowed Men	77.0%	92.1%
Widowed Women	74.3%	93.1%

*Note: Assumptions made for values of control variables: White, Good Health, Citizens Born in U.S, College Graduate, No Children Under Age 5, Employed

VI. Conclusion

We can conclude all hypotheses to hold true in regards to having employer-sponsored insurance, except the gender hypothesis. From the empirical model results, it is determined that married persons have a higher probability of having health care insurance coverage, in reference to unmarried persons. Although the probability for females is higher than males, we found that when examining the interactions between marital status and gender, females have a lesser chance at obtaining employer-sponsored insurance in comparison to males.

The results suggest that the availability of non-employer provided insurance increases the probability of coverage for demographic groups that are less likely to receive employer-sponsored insurance. For example, offering other policies besides employer-sponsored insurance increases the likelihood for females and unmarried persons to obtain coverage. The recent health care reform bill will increase the amount of

publicly available insurance policies (Health Reform, 2010). Looking at the patterns of this study, I predict the coverage percentages will increase within a couple years to incorporate more demographic groups that are at a disadvantage.

Although there are laws set in place to assist individuals that have lost spousal coverage, the results let us know that there is room for improvement. The most recent reform bill addresses some issues pertaining to gender; for insured individuals, premium discrimination based on gender is to be limited. The bill also prohibits discrimination based on salary (Health Reform, 2010). This has large implications on the human capital theory for health insurance, which stated that as productivity and income increases, so does the likelihood of coverage. The new law should eliminate many of the differences in coverage across demographic groups. For example, the new law should reduce the differences in coverage based on marital status. Single, divorced and widowed men and women can expect their coverage to increase to levels enjoyed by married people. By analyzing the gender and marital status interactions, we find that there are female individuals who continue to be at a disadvantage for health care insurance coverage.

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