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Spousal labor market effects from government health insurance: Evidence from a veterans affairs expansion☆

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ABSTRACT

Measuring the total impact of health insurance receipt on household labor supply is important in an era of increased access to publicly provided and subsidized insurance. Although government expansion of health insurance to older workers leads to direct labor supply reductions for recipients, there may be spillover effects on the labor supply of uncovered spouses. While the most basic model predicts a decrease in overall household work hours, financial incentives such as credit constraints, target income levels, and the need for own health insurance suggest that spousal labor supply might increase. In contrast, complementarities of spousal leisure would predict a decrease in labor supply for both spouses. Utilizing a mid-1990s expansion of health insurance for U.S. veterans, we provide evidence on the effects of public insurance availability on the labor supply of spouses. Using data from the Current Population Survey and Health and Retirement Study, we employ a difference-in-differences strategy to compare the labor market behavior of the wives of older male veterans and non-veterans before and after the VA health benefits expansion. Although husbands' labor supply decreases, wives' labor supply increases, suggesting that financial incentives dominate complementarities of spousal leisure. This effect is strongest for wives with lower education levels and lower levels of household wealth and those who were not previously employed full-time. These findings have implications for government programs such as Medicare and Social Security and the Affordable Care Act.

1. Introduction

Government-provided benefits can significantly impact the work and retirement decisions of eligible individuals. Although measuring the effect of a benefit on a recipient is relatively straightforward, the measurement of a program's total effect is complicated when other family members are not covered by the program. Specifically, a program may have positive or negative spillover effects on the labor supply of uncovered family members. When these spillover effects are not taken into account, the full effect of the benefit on labor supply may be mismeasured.

The potential effect of health insurance on work behavior has been of particular interest with the implementation of the Affordable Care Act (ACA) (e.g. Antwi et al., 2013; Baicker et al., 2014; Dague et al., 2014; Garthwaite et al., 2014; Kolstad and Kowalski, 2014), especially in light of Congressional Budget Office projections of reductions in labor supply as a result of this legislation.[2] Although many studies have measured the direct effect of a benefit on the labor supply of recipients, few have analyzed the impact on total household labor supply. The budgetary consequences for other public programs like Medicare and Social Security might be

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[2] See Garrett and Kaestner (2014) for a summary of recent research on public insurance and labor supply. See http://www.cbo.gov/sites/default/files/cbofiles/attachments/45010-breakout-AppendixC.pdf for CBO estimates of the impact of the ACA on labor supply (last accessed: 1/6/15).

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exacerbated if spousal labor supply decreases in response to a benefit or mitigated if spouses increase their labor force participation.

Theory and empirical evidence on the direct effects of publicly provided health insurance not linked to employment show clear-cut decreases labor supply of recipients (Boyle and Lahey, 2010; Dague et al., 2014; Garthwaite et al., 2014). Standard theory predicts that such a benefit will reduce the opportunity cost of leisure, particularly for workers who were previously reliant on employer-provided coverage. Thus, for these recipients, labor supply is predicted to and is shown to fall.

However, the effect of this receipt on the spouse's labor supply is not theoretically clear-cut. On the one hand, as the literature on joint retirement shows for full-time dual-career couples, complementarities of spousal leisure can cause husbands and wives to time their retirements close together. Thus, wives may reduce their hours or exit the labor force at the same time as their husbands, increasing the negative impact of the benefit on labor supply. On the other hand, financial factors are also important to the spouse's labor supply decision. For couples who are credit constrained, joint retirement may not be an option, and the spouse who does not receive the benefit may work more hours in order to reach a target household income once the covered spouse leaves the labor market. The non-covered spouse may also need to increase labor supply in order to receive own employer-provided health insurance, or to increase household income in order to self-insure. This spousal response, known as the "added worker effect," has been studied previously in the context of job loss (e.g. Cullen and Gruber, 2000; Lundberg, 1985; Spletzer, 1997; Stephens, 2002) but our treatment differs because the potential decrease in husband's labor supply is caused by a health insurance benefit rather than a negative employment shock. This understudied employment effect would mitigate the labor supply impact of a benefit borne by one spouse. Unlike most previous literature which examines the effect of *family* health insurance on spousal labor supply, we are able to look at the effect of *individual* coverage.

These competing effects may vary by socioeconomic status (SES) and income. Lower SES couples are more likely to be credit constrained, and low SES men may be more likely to work in physically demanding occupations and to be in worse health. Lower SES women may work in jobs that allow for more flexible hours than career women of higher SES (Long and Jones, 1981). We would therefore expect to see women's hours increase in low SES couples as husbands take advantage of the health insurance offer while wives increase their hours to make up for lost income or to receive their own insurance. High SES women in career-type jobs, on the other hand, may have little discretion over hours worked if they wish to remain employed, suggesting that any change must be on the extensive rather than intensive margin. Additionally, they may already have access to retiree coverage of their own or through their spouse. If these women are attached to their jobs, or they have not yet reached their target retirement incomes, their hours worked may not be affected by their spouse's health insurance receipt. Differences in spousal spillovers by SES are understudied from a theoretical perspective, and to our knowledge this is one of the first papers to provide empirical evidence on these differences.

This paper uses a unique government health insurance expansion to examine the effect of health insurance receipt by men nearing retirement age on the labor supply of their wives. In the mid-1990s, the U.S. Department of Veterans Affairs expanded health insurance availability for U.S. veterans. This expansion had a significant, negative impact on the labor supply of the average veteran recipient (Boyle and Lahey, 2010). Using data from the Current Population Survey and the Health and Retirement Study, we employ a difference-in-differences strategy to compare the labor market behavior of the wives of older veterans and non-veterans before and after the VA health benefits expansion to test the impact of public health insurance on these spouses. Studying the effect of health insurance on these older workers is especially important for mitigating demographic pressures on government programs such as Social Security. This quasi-experimental design also provides suggestive evidence regarding the labor supply implications of the "family glitch" in the ACA.[3] With the increasing labor force participation of women, these spillovers have the potential to have a sizeable impact on the economy and government programs.

Our findings, which are robust to a variety of specification checks, indicate that although household labor supply may decrease with the husband's offer of comprehensive health insurance, labor supply of wives increases, on average. This effect suggests that financial considerations dominate the propensity for a wife to retire at the same time as her husband. This outcome is stronger for wives with high school education or less and with lower levels of household wealth and no or low pension income. These women are more likely than higher SES women to be financially constrained and to be in occupations with flexible work hours and easier labor market entry and exit even at older ages (Long and Jones, 1981). Wives with lower levels of education, low non-housing wealth, and low pension income are more likely to enter the labor force while women with more education, non-housing wealth, and pension income do not significantly increase their propensity to work on the extensive margin.

Using a multinomial probit framework, we provide further evidence that wives in career jobs are insensitive to the husband's insurance offer, while those in more flexible employment situations increase their labor supply, potentially for the purpose of providing their own insurance or to replace family income. Wives' labor supply responses vary by the type of job held in the previous year. Wives who did not work in the previous year have an increased probability of part-time work and self-employment. Wives who worked part-time are more likely to increase their hours to full-time. Women who worked full-time in the previous year are insensitive to their husbands' receipt of insurance.

2. Theory and related literature

In the simplest model, health insurance on the job is paid for by lower pecuniary compensation on the job (e.g. Olson, 2002). Receiving health insurance exogenous to employment is therefore akin to a positive income shock for the household. In this model, the income effect dictates that household labor supply will drop. However, it is not clear whether this decrease in overall household labor supply will be borne by both spouses or by a specific spouse.[4] In this section, we first discuss the predicted effects of in-kind benefits on household labor supply. Next, we detail two competing theories that could affect spousal labor supply in opposite directions: complementarities of spousal leisure that would encourage wives to retire with their husbands, and financial considerations that would encourage wives to increase their labor to make up for the husband's lost income and benefits. Finally, we discuss how these theoretical predictions may vary by socioeconomic status.

[3] See Brooks (2014) for a discussion of this issue.

[4] This simple model does not take into account dynamic decision making, restrictions on hours worked or difficulty finding jobs, or different wage rates for husbands vs. wives. These complications could result in a temporary (or permanent) increase in household hours worked if, for example, with risk averse couples the secondary earner increases hours prior to the primary earner decreasing hours, or if it takes more hours for the secondary earner to reach a target income/insurance level than for the primary earner.

2.1. In-kind benefits

In-kind benefits such as health insurance differ from cash-transfer programs by design, and may affect labor supply differently than equal value cash transfers (Currie and Gahvari, 2008; Moffitt, 2002).[5] Health insurance as an in-kind benefit may increase or decrease labor supply for the recipient depending on income and substitution effects, as well as the effects on the health of the recipient.[6] Empirically, Boyle and Lahey (2010) find that labor supply decreases on average for older men receiving health insurance, but there is a positive effect on the labor supply of those who might be considered to be the worst off. More recent studies on the labor supply effects of expanding state health insurance programs to adults generally find a resulting decrease in labor supply (Garthwaite et al., 2014; Guy et al., 2012; Dague et al., 2014; Dave et al., 2013).[7] These studies examine the effect of health insurance on the recipient only and do not measure potential spillover effects of coverage to spouses.[8]

Predicted effects of an in-kind benefit on the labor supply of a recipient's spouse are ambiguous. If the recipient of a public insurance benefit remains with an employer offering family coverage (and does not increase his expected probability of leaving the labor force in the future), then the spouse is not affected by the public insurance offer. If his receipt allows him to leave employment, losing family coverage, then the insurance offer may increase (or have no effect on) the spouse's labor supply. At the same time, the health insurance coverage acts as an income shock to the entire family, and spousal labor supply may decrease through the income effect. In addition, as we detail in the next section, complementarities of spousal leisure may increase a wife's incentive to retire once her husband has retired.

2.2. Complementarities of spousal leisure

Husbands and wives may make joint retirement decisions, which would increase the attractiveness of reducing hours for wives. In this model, leisure time spent with a spouse provides higher utility than leisure time without a spouse, so one spouse's retirement raises the opportunity cost of labor for the other spouse. Empirically, husbands and wives who both work often time their retirements close together (e.g. Blau, 1998; Coile, 2004; Gustman and Steinmeier, 2000; Ho and Raymo, 2009; Hurd, 1990; Weaver, 1994).

Most work studying joint retirement decisions has focused on monetary shocks such as pension or social security rule changes and benefits that are fungible across spouses; that is, from the perspective of the family unit, it does not matter which spouse gains the additional money. Both structural and empirical results in this literature are consistent with the hypothesis of complementarities of spousal leisure, although husbands seem more responsive to wives' monetary shocks than vice versa (Baker, 2002; Coile, 2004; Gustman and Steinmeier, 2000). In fact, Coile (2004) finds that while men respond to their wives' financial incentives, there is a very small effect of husbands' financial incentives on wives' retirement. An exception to this asymmetry appears in the European literature, where recent work finds that husbands and wives are equally responsive in some cases (Stancanelli, 2012) or wives are more responsive than husbands to the spouse's shock in others (Hospido and Zamarro, 2013).[9] If U.S. women do not retire because they are less likely than their husbands to be able to obtain affordable health insurance once they do so, or because they value health insurance more than their spouses do (as found by Honig and Dushi, 2005), then that may explain some of the mystery behind this asymmetry.

Previous research that has examined the effect of health insurance receipt on spousal work behavior has generally found negative effects of husbands' health insurance availability on wives' labor supply (Buchmueller and Valletta, 1999; Kapinos, 2009; Murasko, 2008; Olson, 1998; Royalty and Abraham, 2006). However, this research focuses on the effect of employer-provided health insurance availability that can cover the entire family and not just the plan participant. The theoretical implications of this type of policy change, similar to extending COBRA or providing universal healthcare, are different than for a policy which only covers one specific member of the household. In these previously studied cases, the wife will have less of an incentive to increase labor supply (even when her husband previously provided the family's health insurance) because she will not need to provide health insurance for the family. Additionally, this literature tends to focus on younger age groups, who may be more attached to the labor force than those ages 55 and older. Some of this literature also has problems with positive marriage selection – "high quality" husbands are more likely to have both health insurance and "high quality" wives with their own labor force attachment. However, the main findings still hold even when this endogeneity is corrected for in more recent work (Kapinos, 2009).

The most related work on this topic to date is a recent study by Witman (2015) that looks at individual (rather than family) coverage using a regression discontinuity design to investigate the impact of Medicare eligibility of an older spouse on the labor supply of the younger spouse. Witman finds a large increase in the probability that a younger wife has her own private insurance coverage (versus coverage through the husband's employer) once the husband gains Medicare eligibility, but finds no corresponding impact on the labor supply of wives. While Witman investigates an anticipated difference in coverage status for spouses, our study is the first to test the impact of an unexpected shock to individual coverage for one member of a couple. Additionally, our results may differ from Witman (2015) because the cohorts studied in that paper are

[5] In-kind benefits may have different labor market effects depending on whether labor and consumption are net substitutes or complements (Currie and Gahvari, 2008; Gahvari, 1994, 1995; Leonesio, 1988; Moffitt, 2002). Both positive and negative effects of in-kind benefits on labor supply have been found empirically, with housing vouchers and food stamps decreasing labor supply (Currie, 2003; Jacob and Ludwig, 2012) and childcare (Gelbach, 2002) increasing it.

[6] See Boyle and Lahey (2010) for an in-depth discussion of the theoretical impact of health insurance on the labor supply of recipients.

[7] However, Baicker et al. (2014) demonstrate no statistically significant employment effects of Medicaid enrollment for childless adults in Oregon, potentially because the OR program targeted a particularly low-income population.

[8] Family spillover effects of in-kind benefits on employment outcomes are examined for few programs. Medicaid is an exception. Early research investigating the effects of children's Medicaid receipt on welfare mothers' employment found that Medicaid access tied to AFDC receipt decreased labor supply (Ellwood and Adams, 1990; Moffitt and Wolfe, 1992; Winkler, 1991). Similarly, Tomohara and Lee (2007) find that non-white, married women with low levels of education reduced their labor supply so that their children would qualify for SCHIP. A number of more recent studies following the decoupling of welfare and Medicaid eligibility find either no effect or labor supply increases (Yelowitz, 1995; Montgomery and Navin, 2000; Ham and Shore-Sheppard, 2001, 2005; Hamersma and Kim, 2009; Hamersma, 2013; Strumpf, 2011). However, as children are, for the most part, ineligible to work in jobs that provide health insurance, the effects of spousal health insurance may be different from those for Medicaid.

[9] A unique exception to this European pattern is Goux et al. (2014), which examines the effect of a French work-week reduction, something which does not have an income effect but does directly reduce hours, on the spouse's labor. This paper finds that wives are responsive to husbands, but not vice versa and suggests that women in France have more heavily constrained work-weeks than men in France. Similarly, papers on UI and DI in the United States tend to find that wives respond to husband's benefit receipt by working less (e.g. Cullen and Gruber, 2000; Chen, 2012), but this phenomenon is more likely to be a secondary-earner effect rather than a joint retirement effect given the ages of the cohorts involved.

older than those in this paper and have at least one spouse at the traditional retirement age. That is, we limit to husbands under age 65, while Witman limits to couples with one member age 65. Our results (available from the authors) are stronger in sign and magnitude when we include even younger husbands in our sample, suggesting that there may be different spousal employment effects by age. Specifically, the elasticity of labor supply with respect to a public insurance benefit is likely to be smaller at older ages. Finally by design, Witman uses an RD framework with a tighter time-window than our DD framework and the longer term effects may differ from shorter term effects. These differences in our results open up important questions for future research.

2.3. Financial incentives

In theory, household labor supply should decrease with the effective income shock from publicly provided health insurance, but that labor supply reduction may not be borne equally by all members of the household. Because wives in these cohorts are more likely than their husbands to have jobs with flexible hours (Johnson, 2004; Long and Jones, 1981), it is possible that a wife's hours may rise when a husband leaves a traditional 40–50 h a week job.

Women are also less likely to have health insurance from their own employment than men (Kapur and Rogowski, 2011), and may lose spousal coverage. If a woman had been receiving health insurance through her husband's job but he has been offered public health insurance, it may make sense for the wife to seek employment options that enable her to obtain her own employer-provided insurance, such as by increasing her hours to full-time (Averett and Hotchkiss, 1995) or by obtaining a new job with health insurance coverage. Alternatively, she might increase her work hours or seek a higher-paying position in order to pay for her own health insurance out-of-pocket.

In essence, although the program results in a decrease in job-lock for husbands, it might create job-lock for wives. Therefore, we would expect to see a larger positive effect on labor market outcomes for women who did not have employer-provided health insurance of their own in the previous year. Since men in this cohort are likely to be older than their wives, and also more likely than their wives to work physically demanding jobs, it may be optimal for the husband to exit the work force while the wife increases her work hours in order to meet a target level of income for the household.

2.4. Differences by socioeconomic status

Note that these theories interact with the socioeconomic status (SES) of the couple. Gahvari (1995) notes that lower and higher SES recipients may prefer different benefits packages, with lower SES beneficiaries preferring additional income to a more generous in-kind benefit. VA health insurance might be preferable to no insurance or to expensive insurance for lower SES couples, but may not be preferable to employer-based insurance or retiree insurance for higher SES couples. Similarly, as noted above, lower SES couples may be too credit-constrained for both members of a couple to retire jointly when the husband is given health insurance. On the other hand, higher SES couples may have more enjoyable jobs, higher wealth targets, and access to retiree insurance. As a result, they may have plans for joint retirement at older ages, and would thus not show up as jointly retiring in our sample. Finally, couples may react differently to financial incentives by their SES. Lower SES women may be less likely to be in a career job and have the option of working part-time or increasing their hours from part-time to full-time, whereas higher SES women may have traditional 40-hour per week career jobs with less flexibility on the intensive margin.

3. Description of VA program

The Department of Veterans Affairs (VA) health care system was established in the 1930s to treat veterans with conditions resulting from their military service, and later, low-income veterans. Prior to the time period we study, VA primarily provided inpatient care, and limited the availability of outpatient care for non-service-connected conditions to follow-up visits after an inpatient stay.

The U.S. government began a major overhaul of this health care system in the mid-1990s. The impetus was an effort to catch up with progress in technology and efficiency in private-sector medicine. In 1995, VA health care began shifting from a system of hospital-based specialty services to one focused on primary care and preventive medicine. Following this change, VA experienced a 44 percent decline in the number of inpatients and a 66 percent increase in the total number of outpatient visits (Klein and Stockford, 2001). At the same time, VA also changed its resource allocation system by distributing its health care budget using a capitated, patient-based formula, similar to the HMO model. VA expected that these changes would result in significant cost reductions. As a result of this assumption, the Veterans' Health Care Eligibility Reform Act, passed in October 1996, relaxed the rules on eligibility for care and offered services to all veterans rather than limiting guaranteed access to low-income and service-connected disabled veterans (U.S. GAO, 1999). During our post period, VA care was consistently found to be of high quality (see, for example, Ross et al., 2008).[10]

Veterans were required to fill out paperwork enrolling in the VA program before they could use health care services.[11] However, it is important to note that veterans could enroll without utilizing VA health care, but enrollment guaranteed the ability to use VA services in the future. Additionally, during the time period of our study, not enrolling did not imply that veterans would not be able to fill out paperwork and enroll in the future should they need VA services. In that respect, VA functioned as insurance for veterans even in the absence of enrollment, similar to the way that COBRA serves as insurance for the first 60 days after job separation regardless of whether the job leaver chooses to pay a premium. Nevertheless, 6.6 million veterans had enrolled by 2002 and VA's patient load had increased from 2.6 million veterans in 1995 to 4.3 million in 2002 (U.S. GAO, 1996, 2003).

During our study period, enrolled veterans were sorted into one of seven priority groups. Those with service-related conditions resulting in disability of 50 percent or higher were considered the highest priority for treatment and were placed in group one. Those with incomes above VA determined thresholds and no service-connected disabilities were considered the lowest priority and placed in group 7. Priority groups 1–6 consisted of previously eligible veterans and care remained free for them. Group 7 veterans were newly eligible and were charged modest copayments. The priority groups were used only for enrollment purposes and determination of copays during the time period of our study. For all enrollees, routine care appointments were provided on a first-come first-served basis regardless of group.

The VA restructuring affected the availability of health care for all veterans. For those not previously eligible, the policy introduced a form of non-employer-provided health insurance. For the previously eligible (i.e., low-income or disabled), it represented an

[10] The expansion in the eligible population combined with an increase in veterans seeking care as a result of the Iraq and Afghanistan wars, however, led to an eventual increase in wait times for care at VA facilities in certain regions which resulted in the current scandal which has been heavily reported on in the popular press (e.g., Cohn, 2014).

[11] VA began accepting applications for enrollment in October 1997, and applications were automatically processed for any veteran who had received care since January 1996.

increase in the scope of health care and health insurance, similar to what is available in the private sector. Therefore, this change provides an exogenous introduction of an outside health insurance option for all U.S. veterans but not for non-veterans. In order to estimate the spillover effect from publicly provided health insurance on spousal labor supply choices we compare the labor supply outcomes of wives of veterans to those of non-veterans before and after the change.

Previous research indicates that veterans used this health insurance to leave full-time employment. Between 35 and 70 percent of new VA health care users are individuals who drop private health insurance plans, potentially because they are leaving full-time work (Boyle, 2009). In response to the policy change, Boyle and Lahey (2010) find a 3.3% increase in the probability that a veteran leaves the labor force and an 8.4% decrease in the probability that a veteran works full time, although some disadvantaged groups appear to increase their labor supply.

4. Data and empirics

4.1. Data

The primary dataset for this paper is the Census Bureau's March Current Population Survey (CPS) for the years 1992 through 2002. The CPS includes consistent information on employment and demographic controls, including veteran status, at an annual level for these years. Using a difference-in-differences (DD) estimation strategy, we compare the labor supply choices of wives of veterans and wives of non-veterans before and after the restructuring of VA health care. We thus limit our sample to married couples.[12] To focus on households in which the husband is on the margin of not working (i.e. approaching retirement), we study couples in which the husband is between the ages of 55 and 64.[13] Additionally, because of the small number of female veterans in this age cohort we restrict our veteran sample to include only males. We delete from our sample couples for which the wife is a veteran, as these wives will be directly affected by the treatment.[14] We also remove active military personnel, since these individuals would receive care through the Department of Defense. With these restrictions, the treated population is therefore the wives of married male veterans ages 55–64, and the control group is the wives of married male non-veterans in the same age group. We define 1992–1995 as the pre-policy period and 1998–2002 as the post-policy period because changes in the VA health care were rolled out during 1996 and 1997.[15]

The CPS allows us to study labor market outcomes on the extensive margin such as labor force or employment exit, and on the intensive margin, such as hours worked, or movement into part-time work. It further allows us to examine earnings, although the universe for which we can study current earnings outcomes is limited during this time period, and type of labor force participation, such as self-employment. We are also able to examine the effects for different demographic groups, such as divisions by education.

We also utilize the Health and Retirement Study (HRS) for the years 1992–2002 (survey conducted in even numbered years) as a supplement to our CPS results. In addition to demographic information and information on current labor supply, the HRS includes additional data on wealth and pension status. We use the same empirical strategy, sample definition, and the same definitions of pre- and post.[16]

4.2. Main specification

We use a probit model to estimate the following equation:

$$y_i = \beta_0 + \beta_1 \text{veteran} + \beta_2 \text{veteran} * \text{post} + \mathbf{X}'\beta_3 + \delta_t + \sigma_s + \zeta_{st} + \varepsilon \quad (1)$$

The dependent variables, y_i, include indicators for wives' labor supply outcomes including not working, hours worked last week, weekly hours worked conditional on working any hours, weekly earnings, and ln(weekly earnings).[17] The variable *not working* is 0 if the wife is employed and 1 otherwise. The *part-time* variable reported is coded as 1 if the number of weekly hours worked is between 0 and 35 h, and 0 if the individual works more than 35 h.[18] *Self-employed* is an indicator that is equal to 1 if the class of worker is self-employed (either incorporated or not incorporated) and 0 otherwise.

Among the independent variables, *veteran* is a dummy equal to 1 if the husband has been honorably discharged from active military duty, *post* is a dummy equal to 1 in the post-policy period, $\boldsymbol{X}$ is a vector of the wife's individual characteristics including age, race, education, and indicators for employer-provided health insurance and pensions in the previous year (including codes of 0 for those not employed) and δ_t is a full set of year dummies while σ_s is a full set of state dummies and ζ_{st} is a state-specific time trend. State dummies and year dummies account for heterogeneity in veteran take-up by state and time; this heterogeneity could be caused by local economic conditions making the program more attractive or variation in the degree to which the program was publicized to veterans in different regions. A state-specific time trend accounts for factors varying within states linearly over time in some specifications. Because the propensity for separating from the labor force will vary with

[12] There may be a concern that the treatment causes selection into marriage or divorce. In our sample of men, marriage rates are almost identical in the pre- and post-periods for veterans and non-veterans, once age is controlled for.

[13] Medicare eligibility at age 65 affects the impact of other public health insurance on the work decision, so we do not include older men. In general, we find that the significance of results is slightly stronger if we limit to those age 50–64 rather than 55–64, possibly because of a larger sample size.

[14] We also delete the two observations for which the wife is under the age of 19. The results are nearly identical when these are not deleted. We have also run regressions limiting wife ages to 45–64, 50–64, and 55–64. In general, these results are qualitatively the same as our main results. Quantitatively, Table 3 results on work outcomes are generally slightly larger in magnitude and significance for these subsets (Table 6, Panel I provides some results).

[15] We end our study period in 2002 because VA revised the rules for obtaining health care in January 2003. We have also estimated our regressions restricting our post-period to 1998–2001 because of a concern that particular Vietnam Era veterans are affected by a 2002 change that categorized diabetes as a war-related injury for veterans who may have been exposed to Agent Orange (Autor and Duggan, 2007; Duggan et al., 2010). Results are qualitatively almost identical and significance increases in some regressions when we remove 2002 from our sample. Table 6, Panel III provides these results for Not Working and Hours Worked outcomes.

[16] Replication of our main results using the HRS in place of the CPS is similar (generally showing the same sign, significance, and magnitude) and is available from the authors. There will be some differences because even with the weighting, the HRS sample is a panel that ages over time while the CPS sample is a repeated cross-section.

[17] Weekly earnings are earnings during a usual work week. This question is limited only to respondents in their fourth and eighth months of the survey, reducing sample size. For the weekly earnings outcomes we code respondents in these months who did not have positive earnings as having zero earnings. Hourly earnings are constructed from weekly earnings and are available from the authors. We present weekly earnings because the results for hourly wages are similar to those for weekly earnings but, as a created variable, hourly earnings introduces more measurement error and is more problematic dealing with top-coding. Non-imputed hourly earnings are available only for the subset of the sample that earns an hourly wage.

[18] This definition of part-time was chosen to represent changes on the intensive margin between part-time and full-time work. Care should be taken in its interpretation – it does not account for selection bias on the extensive margin for people who are not working.

benefits offered, we include indicators for employer-provided health insurance coverage and inclusion in a pension plan in the previous year in some specifications. Standard errors are adjusted for non-independence of the errors within the *veteran*year* group via clustering.

4.3. Identification assumptions

In a difference-in-differences model, in order to interpret the results causally, specific assumptions must be satisfied. In our quasi-experimental setup, it must be true that: (1) wives of veterans and non-veterans are reasonably similar before the healthcare expansion, (2) only veterans are affected by the VA expansion, (3) no other shocks occur during this time period that differentially affect household labor supply choices, and (4) that the two populations would not trend differentially in the absence of a policy change due to unobservable factors.

Table 1 presents summary statistics demonstrating that the veteran and non-veteran samples are reasonably similar in the pre-period in both the CPS and the HRS. The average veteran is significantly more educated than the average non-veteran. As would be expected with assortative mating (Mare, 1991; Pencavel, 1998), wives of veterans are also significantly more educated than wives of non-veterans. Additionally, wives of veterans are slightly and significantly older than wives of non-veterans in the pre-period, and the age composition of veterans compared to non-veterans is changing over time. We therefore include controls for the wife's education and age in all specifications. National Health Interview Survey calculations available in Boyle and Lahey (2010) demonstrate that there are no differences in health between veterans and non-veterans in the pre-period for the cohorts examined in this study.[19]

Assumption (2) is valid because non-veterans and their spouses were not affected by the VA insurance expansion. Although some veterans already had access to VA health insurance, it was much less comprehensive than the coverage post-expansion, so those individuals are still substantially impacted by the change. Using textbook definitions of insurance, veterans were insured once VA coverage was offered (whether or not they formally enrolled) because they could sign up at any time if coverage was needed. Therefore even if they were not formally insured, they were insured in an economic sense, and thus were treated in the first stage. However, if some veterans were unaware of the insurance, our results will provide an underestimate of the behavioral effect of full government coverage.[20]

The third assumption would be violated if something else besides this expansion affects veterans and non-veterans or their wives differentially. Other policy changes in 1996–1997 such as welfare reform are unlikely to affect older male veterans and their wives differently than older male non-veterans and their wives.[21] Finally, unobserved systematic differences between the treatment and control groups could cause the treatment and control to trend differently in the post-period. However, we find no evidence of pre-existing trends using pre-policy years as a falsification exercise in Table 2, Panel II. Additionally, results are very similar when the model is fully interacted with *veteran* as shown in Table 6, Panel III.

Table 1
Summary statistics, 1992–2002.

	Veterans		Non-veterans		*P*-value
	Pre	Post	Pre	Post	Pre vet/non-vet diff?
CPS					
Husbands					
Observations	10,187	9493	8164	12,674	
Age	59.81	59.25	58.92	59.02	<0.001
White	0.94	0.92	0.87	0.87	<0.001
No HS	0.16	0.07	0.34	0.24	<0.001
HS	0.36	0.36	0.31	0.30	<0.001
Some college	0.23	0.28	0.14	0.17	<0.001
College grad	0.15	0.16	0.11	0.15	<0.001
Northeast	0.23	0.21	0.25	0.22	0.013
Midwest	0.25	0.24	0.24	0.23	0.033
South	0.31	0.31	0.31	0.32	0.666
West	0.21	0.24	0.20	0.23	0.405
Not working	0.35	0.31	0.32	0.29	<0.001
Part time (<35 h)	0.10	0.10	0.09	0.09	0.054
Self-employed	0.16	0.15	0.19	0.17	<0.001
Hours worked	25.50	27.51	26.94	28.68	<0.001
Wives					
Observations	10,187	9493	8164	12,674	
Age	56.08	55.42	55.08	55.27	<0.001
White	0.94	0.92	0.87	0.87	<0.001
No HS	0.14	0.09	0.26	0.19	<0.001
HS	0.47	0.42	0.42	0.38	<0.001
Some college	0.23	0.27	0.17	0.22	<0.001
College grad	0.10	0.14	0.09	0.14	0.012
Not working	0.47	0.38	0.47	0.41	0.414
Hours worked	17.52	21.15	17.82	20.32	0.317
Health insurance	0.32	0.39	0.31	0.37	0.018
Weekly earnings	276.96	360.22	273.77	335.63	0.683
HRS					
Husbands					
Observations	5311	6470	3772	7114	
Age	58.60	59.19	57.87	59.01	<0.001
White	0.93	0.92	0.85	0.86	<0.001
No HS	0.15	0.08	0.32	0.26	<0.001
HS	0.38	0.37	0.34	0.30	<0.001
Some college	0.22	0.28	0.13	0.15	<0.001
College grad	0.25	0.27	0.21	0.29	0.001
Wives					
Observations	4963	5396	3189	6040	
Age	56.80	57.69	56.32	57.75	<0.001
White	0.94	0.93	0.88	0.88	<0.001
No HS	0.15	0.11	0.25	0.20	<0.001
HS	0.50	0.43	0.42	0.38	<0.001
Some college	0.20	0.28	0.19	0.21	0.215
College grad	0.15	0.19	0.14	0.21	0.437
Not working	0.45	0.41	0.41	0.43	<0.001
Hours worked	18.45	19.88	20.94	19.99	<0.001

Note: Universe is limited to married couples with husbands between the ages of 55 and 64 whose wives are not veterans. The pre-period includes years 1992–1995 and the post period includes years 1998–2002. In the CPS, two observations with wives under the age of 18 have been deleted from the universe. Part-time is conditional on working and has fewer observations than those listed. In the HRS, means are weighted using person weights to match the CPS; HRS observations are different between husbands and wives because some weights are 0. The number of observations varies for variables in the HRS because race and education questions were not answered by all participants; observations listed are the mode among the listed variables.

[19] Weighted regressions using inverse propensity score weights or coarsened exact matching weights, calculated to balance the treatment and control groups, produce results that are comparable to our main results.

[20] According to a 2001 survey, 22% of unenrolled veterans said they were unaware of the program (Department of Veterans Affairs, 2002).

[21] Additionally, we run a specification check in which we limit our sample to those without children (and are thus less likely to be affected by welfare reform), and our results are nearly the same and possibly more precise, as shown in Table 6, Panel II.

Table 2
Effect of insurance receipt on labor supply outcomes for veterans.

	Not working		Part time		Self employed	
	(1)	(2)	(3)	(4)	(5)	(6)
Panel I: Effects of insurance receipt						
Veteran*post	0.0049	0.0075**	0.0151***	0.0146***	−0.0024	−0.0017
	(0.0049)	(0.0033)	(0.0053)	(0.0053)	(0.0042)	(0.0045)
Veteran	0.0169***	0.0308***	−0.0012	0.0043	−0.0352***	−0.0245***
	(0.0037)	(0.0027)	(0.0039)	(0.0038)	(0.0039)	(0.0044)
Observations	40,518	40,518	26,047	26,047	40,518	40,518
Panel II: Falsification exercise: 1992–1993 = pre, 1994–1995 = post						
Veteran*fakepost	−0.0122	−0.0045	0.0092	0.0064	0.0072	0.0051
	(0.0080)	(0.0049)	(0.0081)	(0.0070)	(0.0071)	(0.0084)
Veteran	0.0244***	0.0341***	−0.0053*	0.0015	−0.0387***	−0.0272***
	(0.0070)	(0.0045)	(0.0032)	(0.0036)	(0.0050)	(0.0060)
Full controls?	No	Yes	No	Yes	No	Yes
State time trend?	No	Yes	No	Yes	No	Yes
Observations	18,351	18,351	11,370	11,370	18,351	18,351

Notes: Data from Current Population Survey. Coefficient estimates are taken from a probit regression as described in Eq. (1). Marginal effects are reported. Regressions include age, race, state, year and education dummies and a constant. Full controls include health insurance receipt in the previous year and pension in the previous year for columns (1) and (2) and current year in columns (3) and (4) and a state-specific time trend. The universe in Panel I includes the years 1992–2002 with 1996 and 1997 omitted. The universe in Panel II includes years 1992–1995, with fakepost indicating the years 1994–1995. Men whose wives are veterans or under age 18 are removed from the universe. Robust standard errors in parentheses are clustered on veteran and year.

* Significant at 10%.
** Significant at 5%.
*** Significant at 1%.

5. Results

5.1. First stage results

First, we demonstrate that the VA expansion had a direct negative effect on the labor supply of married men. Table 2, Panel I presents the marginal effects from estimating Eq. (1) on outcomes for married men only using the men's characteristics as controls.[22] Veterans are less likely than the control group to be working after receiving VA health insurance, with a significant coefficient of 0.008 once a full set of controls is added, a 2.3% increase relative to the pre-period veteran average of 0.35. Veterans also increase part-time work with significant coefficients of 0.015 in both specifications, an increase of 14.7% relative to the pre-period value of 0.102. Table 2, Panel II, provides a robustness check for these results, demonstrating that there is not a pre-trend by cutting the universe to only include pre-period data and creating a "fake post" variable that is 1 for 1994–1995 and 0 for 1992–1993. As would be expected if there was not a pre-trend, results are not significant, and indeed, are opposite-signed for the not working outcome.[23]

5.2. Main results

Having demonstrated that the VA expansion decreased married men's labor supply, we turn to the spillover effects of this coverage on their wives who are not eligible to use VA health care. Fig. 1 illustrates the different trends for wives of veterans and wives of non-veterans. Specifically, it shows changes over time in the raw probability means of not working for wives of veterans and non-veterans. As shown, in the pre-reform years veteran and non-veteran wives had very similar rates of non-participation. In the years following the reorganization, however, veteran wives have a distinct decrease in the probability of not working relative to non-veteran wives, suggesting that husbands' access to public insurance does impact wives' labor supply decisions.

We next confirm these extensive-margin trends by estimating Eq. (1) for wives' outcomes. As shown in Table 3, Panel I, columns (1) and (2), we find that wives are between 1 and 2 ppt more likely to work once their husbands receive VA insurance. This implies a 3–4% increase in the probability of working relative to the pre-period average of 0.473, although once full controls are added this effect is only marginally significant.[24]

We further explore changes on the extensive vs. intensive margin by testing the effect on wife's hours worked. In Table 3, Panel I, columns (3) and (4), we find that average hours worked per week for all women increases by approximately half an hour (between 0.44 and 0.63 h). Focusing on the intensive margin only, columns (5) and (6) report the effect of hours worked conditional on working at all. These are positive, with a magnitude between 0.22 and

[22] These results differ slightly from those in Boyle and Lahey (2010) because the universe for that exercise included single men (who are shown to be more likely to leave the labor market than married men after receiving health insurance) and, in order to be consistent with the previous job-lock literature, limited to men who were working in the previous year. We do not condition on previous employment in order to examine the spillover effects on spouses. Additionally, in Boyle and Lahey (2010) we included industry and occupation controls in the set of full controls, but in our regressions with wife outcomes, the small size of some of these cells causes observations to drop out in the probit specifications, potentially resulting in selection biases. Results are nearly identical for the men and qualitatively similar for the women results with these controls included.

[23] We have also calculated first stage results for husbands of the subgroups of wives examined in Tables 3–5 (tables available from authors). These results are consistent with the theory that husbands are more likely to reduce their labor supply if their wives have or are able to obtain their own employer-sponsored insurance. For example, husbands whose wives were working full-time in the previous year are less likely to work at all and more likely to work part time, whereas husbands whose wives were not previously working are more likely to work. These results taken as a whole also suggest a role for joint decision making as, assuming risk averse households, wives may increase their labor prior to the husband decreasing labor supply.

[24] Our preferred specification is that without a state-specific time trend because of concerns about over-controlling as outlined in Wolfers (2006). However, we appreciate the argument that state-specific time trends control for important unobserved variation. Therefore, we present both specifications in Tables 2 and 3 to demonstrate how our baseline results vary with these additions. Similarly, we prefer specifications without controls for health insurance or pension receipt in the previous year.

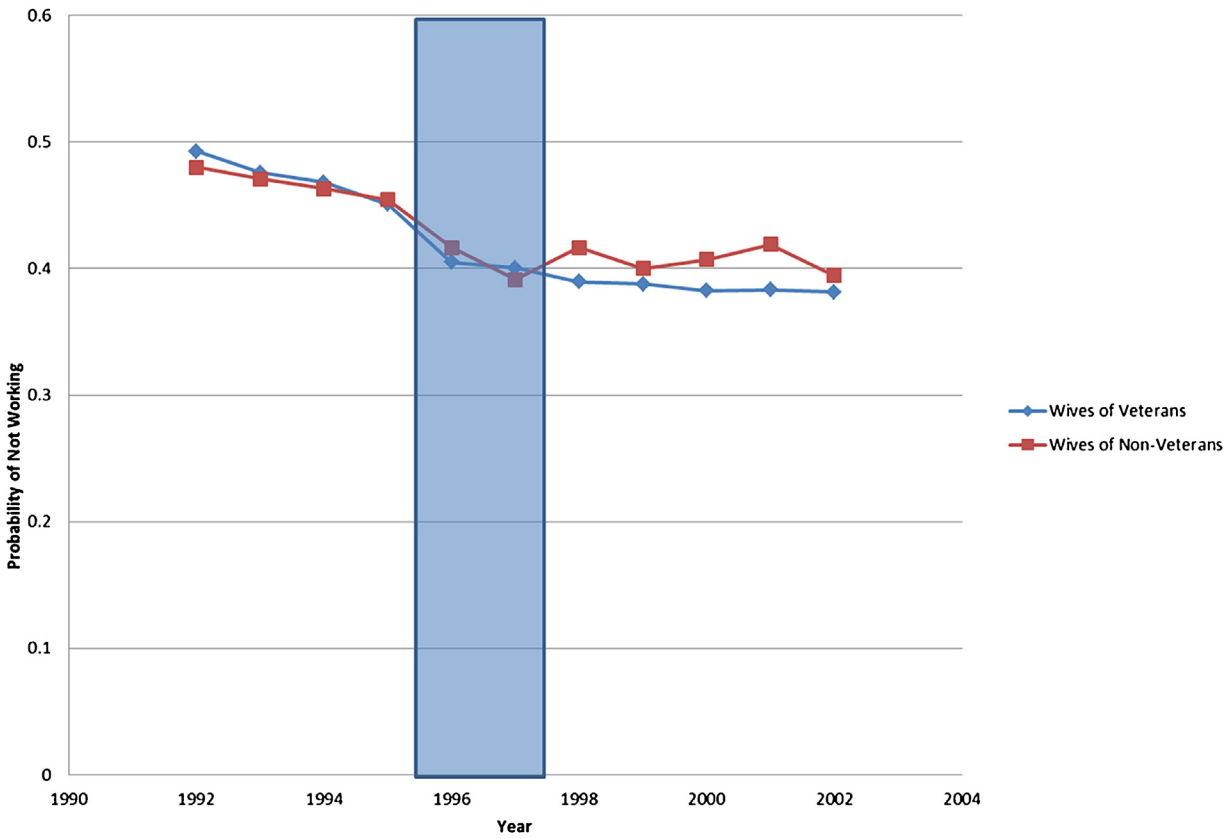

Fig. 1. Probability of not working for wives of veterans and non veterans.

0.24 h, but not significant. These smaller numbers suggest that the increase in hours is primarily on the extensive margin.

In Table 3, Panel I, columns (7)–(10) we examine the effect on women's weekly wages.[25] We construct this measure by dividing the annual income in the previous year by weeks worked in the previous year. Earnings overall increase by $8.70–$13.75 (in 2002 dollars), although this result is not robust to the addition of the full set of controls. Log weekly earnings in Table 3, Panel I, columns (9) and (10) increase 3–4% for all women.

Overall, results indicate that for wives on average, financial incentives dominate effects from complementarities of spousal leisure in retirement decisions following husbands' receipt of public insurance. Wives increase their labor supply according to several tested measures, with effects that appear to be driven by changes on the extensive margin. This behavior indicates that wives potentially enter the labor force in order to secure their own health insurance coverage or to reach a target level of income or retirement savings for the household, or potentially both. In the next section, we demonstrate that these results are primarily driven by lower SES families and we explore reasons for this behavior.

5.3. Differences by socioeconomic status: what and why

As discussed above, we would potentially expect effects to vary for different socioeconomic groups. Women from lower SES households might be more likely to face household credit constraints and also potentially have more flexibility to expand their work hours.[26] Our results appear to be driven by wives with high school or less education, as demonstrated in Table 3, Panel II, columns (1) and (2). Women with high school education or less are 3 ppt more likely (a 5.6% increase off a base of 0.53) to work when their husbands are offered VA insurance.[27] For women with at least some college education, coefficients are smaller, insignificant, and change signs when full controls are added, as shown in Table 3, Panel III, columns (1) and (2).[28]

Similarly, when hours worked are examined by women's education level, women with a high school education or less in Table 3, Panel II, columns (3) and (4), work 0.6–0.8 h more per week when their husbands are offered health insurance. In contrast, results for women with some college or more in Table 3, Panel III, columns (3) and (4) are positive but insignificant. Results on hours on the intensive margin in columns (5) and (6) are again not significant when broken up by education.[29]

As might be expected given the effects on work, weekly earnings increase for wives with high school or less education, with an increase between $23.80 and $27.38, as shown in Table 3, Panel II, columns (7) and (8). Results are still positive, but smaller and only significant with minimum controls for wives with some college or

[25] Results trimming the top 5% of wages are very similar.

[26] In results available from the authors, we demonstrate that wives with lower levels of education are more likely to be not working or working part-time (therefore more likely to be able to increase their work hours), than wives with higher levels of education. Lower-education wives are also more likely to be employed in occupations that involve shift work (e.g. cashiers, waitresses, cleaning staff) than higher-education wives.

[27] Note that in these and all results separated by education, we have removed women with graduate degrees as they seem to behave differently than college graduates but sample sizes are not large enough to examine them separately. Results are robust but somewhat attenuated when these women are included.

[28] The coefficients for veteran*post are significantly different between Panel II and Panel III.

[29] The coefficients for veteran*post are not significantly different between Panels II and III.

Table 3
Effect of husband's insurance on wife's outcomes.

	Not working		Hours worked		Hours worked|hrs>0		Earnings		ln(Earnings)	
	Min controls (1)	Full controls (2)	Min controls (3)	Full controls (4)	Min controls (5)	Full controls (6)	Min controls (7)	Full controls (8)	Min controls (9)	Full controls (10)
I. All wives										
Veteran*post	−0.0180**	−0.0136*	0.6336***	0.4365*	0.2207	0.2403	13.7452**	8.7002	0.0404**	0.0275**
	(0.0071)	−0.0081	(0.2146)	(0.2071)	(0.2308)	(0.2230)	(6.2424)	(5.8110)	(0.0144)	(0.0128)
Veteran	0.0160***	0.0243***	−0.4422***	−0.6665***	0.0262	−0.1534	1.1798	−3.6154	0.0147	0.0115
	(0.0045)	−0.0046	(0.1186)	(0.1295)	(0.1616)	(0.1626)	(5.8692)	(4.6083)	(0.0138)	(0.0128)
Observations	40,495	40,495	40,518	40,518	21,802	21,802	35,600	35,600	20,576	20,576
II. Wives with high school education or less education										
Veteran*post	−0.0302***	−0.0298***	0.7967***	0.6303**	−0.0251	0.0708	27.3798***	23.8000***	0.0664***	0.0547***
	(0.0092)	(0.0113)	(0.2413)	(0.2663)	(0.1825)	(0.1949)	(5.2599)	(6.0277)	(0.0222)	(0.0183)
Veteran	0.0218***	0.0330***	−0.6943***	−0.9350***	−0.0921	−0.2837	4.2230	−0.4951	0.0062	0.0031
	(0.0072)	(0.0088)	(0.1620)	(0.1841)	(0.1403)	(0.1735)	(5.4615)	(4.7111)	(0.0212)	(0.0180)
Observations	23,768	23,768	23,827	23,827	11,311	11,311	20,318	20,318	10,321	10,321
III. Wives with some college or college education										
Veteran*post	−0.0035	0.0076	0.4789	0.1495	0.5698	0.4861	16.3277***	6.3861	0.0277*	−0.0009
	(0.0085)	(0.0092)	(0.5074)	(0.4371)	(0.5091)	(0.5123)	(2.7659)	(4.3967)	(0.0132)	(0.0142)
Veteran	0.0046	0.0086*	−0.2125	−0.3957	−0.2841	−0.3889	−6.4426***	−9.7987**	0.0163	0.0204
	(0.0057)	(0.0050)	(0.3385)	(0.2740)	(0.3856)	(0.3982)	(1.6834)	(3.4784)	(0.0122)	(0.0122)
Observations	13,837	13,837	13,881	13,881	8464	8464	12,726	12,726	8308	8308
IV. Wives with graduate education										
Veteran*post	−0.0046	0.0118	−0.1616	−0.0168	−0.2925	−0.0330	−90.0526*	−93.9637*	−0.0192	0.0014
	(0.0119)	(0.0164)	(0.5716)	(0.6565)	(0.7942)	(0.8538)	(45.7236)	(53.4509)	(0.0617)	(0.0577)
Veteran	0.0143	0.0001	0.9523***	0.9762**	1.9923**	1.8252**	36.9660	41.1919	0.0490	0.0310
	(0.0089)	(0.0127)	(0.2949)	(0.4609)	(0.6915)	(0.7224)	(44.3640)	(52.0244)	(0.0456)	(0.0323)
Observations	2791	2791	2810	2810	2027	2027	2556	2556	1947	1947

Notes: Data from Current Population Survey. Coefficients from estimating Eq. (1). Universe years for columns (1)–(6) are 1992–2002, omitting 1996 and 1997. Universe years for columns (7)–(10) are 1992–2001, omitting 1996 and 1997. Columns (1) and (2) report the marginal effects from a probit regression. Columns (3)–(10) report OLS results. Weekly earnings are created from previous year variables in 2002 dollars using the BLS CPI inflator. Regressions include age, race, state, year and education dummies and a constant. Full controls include pension and health insurance receipt in the previous year and a state-specific time trend. Robust standard errors in parentheses are clustered on veteran and year. Men whose wives are veterans or under age 18 are removed from the universe. Wives with graduate education are not included in Panel III. In columns (1) and (2), some wife ages predict wife not working perfectly and 23 obs are dropped. Coefficients on veteran*post are statistically significantly different for wives in panels II and III for columns (1) and (2), but not columns (3)–(10).

* Significant at 10%.
** Significant at 5%.
*** Significant at 1%.

more and for all wives in Panel III. Log weekly earnings in Panel II, columns (9) and (10) show a 5.5–7% increase in weekly income for less educated wives, while no significant effect on ln(earnings) is shown for more educated wives.[30]

We next investigate whether the increase in labor supply for lower-education wives, who are more likely to face credit constraints, relates to the households' financial incentives. Using data from the HRS, we test for differential responses by the level of household wealth. Table 4 presents results for wives in households with low and high non-housing wealth and low and high pension income. We define "low" wealth as below the median level and "high" as above the median.[31] We define low and high pension income similarly, but cut at the median for all households with positive pension income.[32] Patterns by household wealth and pension levels are very similar to results by education level. As shown in Table 4, Panel I, wives in households with low levels of non-housing wealth have an 8.4 ppt increase in the probability of working and work an additional 3.25 h per week, while the coefficients for wives in high-wealth households are smaller and not statistically significant. Wives in households with low levels of pension income also show a significant increase in the probability of work and hours worked, which rise by 0.06 and 2.53, respectively. Wives in households with high levels of pension income, however, do not have significant responses for either outcome. These results suggest that the need to reach a target household income or amount of retirement savings may be part of what is driving women's increased labor force participation.

Another potential reason to increase labor force participation is for women to gain their own health insurance coverage. Women who had health insurance coverage from their own employers prior to the policy implementation may be more likely to stay employed than those who did not in order to keep that coverage. However, women who did not have their own health insurance coverage may need to earn more money to self-insure if they lose their husbands' coverage, or may seek jobs with employer-provided insurance. We

[30] The coefficients for veteran*post are not significantly different between Panels II and III. In results not shown, annual earnings follow a similar pattern with less educated women earning $982.25–$1293.48 more per year on average (in 2002 dollars). Similarly, hourly wages (also not shown), created by dividing weekly wages by usual hours worked, find a 2–4% increase for ln(hourly wages) for women with high school or less education, although the remaining outcomes do not yield significant results. These results on wage, taken as a whole, suggest that wage movements are primarily occurring on the extensive margin. However, they are also consistent with increased measurement error introduced by greater levels of variable construction.

[31] Median household wealth is $187,495.92 in 2002 dollars, adjusted using the CPI. Results cutting at the 75th percentile for wealth show similar patterns. We also explore results for low and high total wealth, which includes housing wealth. Results are similar for total wealth, but smaller in magnitude, which makes sense given that housing wealth is less fungible than non-housing wealth. Results are nearly identical when wife's age is top and bottom-coded in order to increase cell sizes.

[32] Household pension income is the sum of the husband and wife's pension. The median for households with positive pension income is $15,043.24 in 2002 dollars.

Table 4
Results by household wealth and pension income.

	Not working (1)	Hours worked (2)	Hours worked|hrs>0 (3)	Not working (4)	Hours worked (5)	Hours worked|hrs>0 (6)
	Low non-housing wealth			High Non-Housing Wealth		
Panel I: By non-housing wealth						
Veteran*post	−0.0837***	3.2565***	0.7024	−0.0200	0.9175	−0.0333
	(0.0236)	(0.9142)	(0.7712)	(0.0225)	(0.9121)	(0.8568)
Veteran	0.0223	−1.4696**	−1.1788**	0.0639***	−2.8605***	−1.2102*
	(0.0181)	(0.7042)	(0.5949)	(0.0171)	(0.7009)	(0.6573)
Sig different?				Yes	Yes	No
Observations	9372	9450	5029	10,082	10,119	5751
	Not working (1)	Hours worked (2)	Hours worked|hrs>0 (3)	Not working (4)	Hours worked (5)	Hours worked|hrs>0 (6)
	Low pension income			High pension income		
Panel II: By pension income						
Veteran*post	−0.0578***	2.5284***	0.5932	0.0011	−0.8491	0.8541
	(0.0174)	(0.6855)	(0.6166)	(0.0484)	(1.7874)	(2.3256)
Veteran	0.0599***	−2.7219***	−1.0951**	0.0479	−2.2591	−2.8526
	(0.0133)	(0.5223)	(0.4678)	(0.0396)	(1.5363)	(2.0115)
Sig different?				Yes	Yes	No
Observations	16,693	16,779	9629	2737	2768	1147

Note: Data from the Health and Retirement Study. Universe is even years from 1992–2002, omitting 1996. Coefficients from estimating equation (1) as a weighted regression using wives' sample weights. Columns (1) and (4) report the marginal effects from a probit regression. Remaining columns report results from an OLS regression. Wealth and income are measured in constant-year dollars using the BLS CPI inflator. Low wealth and income are defined as below the median; high wealth and income are above the median. Regressions include race, and a full set of state, year, age, and education dummies and a constant. Robust standard errors in parentheses are clustered on veteran and year.

* Significant at 10%.
** Significant at 5%.
*** Significant at 1%.

find some suggestive evidence (not shown) that wives with prior employer-provided coverage stay in the labor force and that those without prior such coverage increase their hours worked. However, there may be unobserved compositional differences between these two groups and differences between the types of jobs that offer health insurance compared to those that do not (e.g. Farber and Levy, 2000) that drive these findings. Additionally, the variables measuring health insurance coverage undergo several changes during this time period (Fronstin, 2000; Nelson and Mills, 2001)

As described above, women in full-time career jobs may respond differently to husbands' public insurance receipt than those in more flexible employment positions. We therefore utilize a multinomial probit framework to investigate whether wives' responses differ depending on their labor force activity in the previous year. Table 5 reports marginal effects from multinomial probit regressions that examine transitions into and out of not working, full- and part-time work and self-employment. Panel I replicates our main regression in a multinomial probit framework for all wives in our sample (i.e. not conditioning on the wife's labor force experiences in the previous year).[33] Consistent with the main results, wives are about 1.72 ppt more likely to work, and much of this change appears to be women increasing their full-time labor force participation. However, these transitions are different for women who were unattached to the labor force in the previous period. Panel II limits our sample to women who were not working at all in the previous year. These individuals are 0.42 ppt more likely to enter the labor force upon the husbands' receipt of VA insurance (not significant),[34] and they appear to predominantly enter part-time work for an employer (0.39 ppt) or self-employment (0.43 ppt). Women who worked part-time in the previous year, on the other hand, as shown in Panel III, do not change their labor force attachment, but instead work more hours, moving from part-time work into full-time work, with a decrease from part time work of 2.98 ppt (not precisely measured) and a significant increase in full-time work of 3.62 ppt. This transition potentially makes them eligible for employer-provided health insurance or provides the additional income needed to self-insure. Finally, in Panel IV, we see no effect on women who were working full-time in the previous year. They neither leave the labor market nor change their labor force participation. These results as a whole are highly consistent with the hypotheses that married women value health insurance and seek out their own employer-provided health insurance or seek greater income in order to pay for potential medical expenses once their husbands are offered publicly provided health insurance.

5.4. Robustness checks

In addition to the standard first-stage checks reported earlier, we provide a number of additional robustness checks in Table 6. In our base specification, we included all wives over the age of 18 in our sample. However, women of younger ages may have different labor market attachment than older women. Panel I provides results limiting to different age groups. When wife ages are limited to 45–64, the percentage point magnitude of the results for the not working and hours worked outcomes is very similar to that in the main specification in Table 3. Limiting women to the same ages as the men in the sample, ages 55–64, provides larger magnitude results than our earlier sample. In this case, women are 3.4 ppt more likely to work and increase hours worked by 1.12, about twice the magnitude of our base regressions. A related concern is that men who have reached the Social Security early entitlement age may react differently than those who have not. Limiting the sample to wives whose husbands are between the ages of 55 and 62 slightly attenuates the results for not-working, with a decrease of

[33] With the exception of 992 women whose part-time vs. full-time status could not be determined because they did not work in the previous week. Robustness checks assuming these women are either full-time or part-time provide similar results.

[34] Using a multinomial logit specification rather than multinomial probit, this magnitude is 0.61 and significant at the 5% level; similarly Panel III column (2) reports a significant (at the 5% level) decrease in part-time work of 3.19 ppt. All other reported results are similar in magnitude and significance using a multinomial logit specification.

Table 5
Pathways: multinomial probits.

	(1) Full-time	(2) Part-time	(3) Self-employed	(4) Not working
I. All wives				
Veteran*post	0.0160***	0.0001	0.0011	−0.0172***
	(0.0061)	(0.0035)	(0.0040)	(0.0059)
Veteran	0.0008	−0.0031	−0.0133***	0.0157***
	(0.0038)	(0.0032)	(0.0031)	(0.0038)
Observations	39,526	39,526	39,526	39,526
II. Wives who worked 0 weeks last year				
Veteran*post	−0.0041*	0.0039**	0.0043***	−0.0042
	(0.0021)	(0.0018)	(0.0015)	(0.0032)
Veteran	0.0002	−0.0033**	−0.0049***	0.0081***
	(0.0018)	(0.0014)	(0.0008)	(0.0027)
Observations	15,028	15,028	15,028	15,028
III. Wives who worked part-time last year				
Veteran*post	0.0362***	−0.0298	−0.0063	−0.0001
	(0.0132)	(0.0185)	(0.0191)	(0.0110)
Veteran	−0.0369***	0.0383***	−0.0072	0.0058
	(0.0049)	(0.0061)	(0.0176)	(0.0104)
Observations	5081	5081	5081	5081
IV. Wives who worked full-time last year				
Veteran*post	−0.0067	−0.0037	0.0060	0.0044
	(0.0046)	(0.0032)	(0.0040)	(0.0042)
Veteran	0.0251***	0.0001	−0.0231***	−0.0021
	(0.0027)	(0.0024)	(0.0028)	(0.0032)
Observations	15,490	15,490	15,490	15,490

Notes: Data from Current Population Survey. Universe is 1992–2002, omitting 1996 and 1997. Coefficient estimates are marginal effects from a multinomial probit regression. Regressions include age, race, state, year and education dummies and a constant. Part-time in the previous year is defined as working more than 0 and less than 35 h/week and at least 40 weeks in the previous year. Full-time in the previous year is defined as 35 or more hours/week and at least 40 weeks in the previous year. Robust standard errors in parentheses are clustered on veteran and year.

* Significant at 10%;
** Significant at 5%;
*** Significant at 1%.

1.53 ppt for not-working significant at the 10% level, but increases the magnitude of the effect on hours worked to .78 h.

We may expect to see stronger results for couples in which the husband is either not working full-time or is not working at all, as these are couples for whom the VA coverage potentially caused a decrease in the husband's labor supply. In Panel II of Table 6, we explore outcomes for wives whose husbands are working part time or are not working. Panel II demonstrates results with larger magnitudes for these two groups. Wives of husbands who are not working full time are more likely to work and work about 1.37 more hours per week after public health insurance is offered to their husbands. Similarly, wives of husbands who are not working at all have an even larger increase in probability of working (4.3 ppt) and increase their hours worked by 1.76 h per week. Our preferred specification in Table 3 includes all wives regardless of their husbands' labor force attachment because it allows for possible variations in the timing of labor supply changes within couples. Some husbands with employer-provided insurance may continue full-time work in spite of the availability of VA insurance, with the expectation that they will reduce their labor supply once their wives are able to find an alternate source of insurance (i.e., the wife might change her labor supply before or at the same time as the husband). An additional concern may be that the presence of children in the household might impact labor force attachment, and households with children may be affected by other policies, such as welfare reform. Columns (5) and (6) limit to households with no children present and produce results similar to our main results.

Panel III provides additional robustness checks. Columns (1) and (2) demonstrate that fully interacting the independent variables in the model with *veteran* provides results similar to the base regression. Columns (3) and (4) demonstrate the same for removing the year 2002 (when diabetic Vietnam veterans potentially exposed to Agent Orange were re-categorized as having service-related injuries). Columns (5) and (6) control for relative ages of husband and wife and the presence/absence of children under the age of 18 in the household. Results are similar to the main results.

6. Discussion and conclusion

When husbands approaching the age of retirement obtain public health insurance, the labor supply of their wives increases, on average. This result is predominantly driven by less-educated wives and wives in lower-wealth households, who are more likely to enter the work force when their husbands leave work. Wives with a high school education or less increase their labor supply 3 percentage points, a 6% increase. These less educated women also work more hours per week after the policy change and have higher weekly earnings. We find no statistically significant change in probability of work for wives with higher levels of education.

The results by education level are consistent with findings for women in households with low non-housing wealth and low total pension income. Wives in low-wealth or low pension income households have a statistically significant increase in the probability of work and in hours worked, while wives with high-wealth or high pension income have no significant change in the probability of work or number of work hours. This suggests that financial incentives, in particular credit constraints and a need to reach a target family income, are one important factor in wives' work and retirement decisions.

As discussed above, wives may also adjust their labor supply in order to gain access to their own health insurance coverage,

Table 6
Robustness checks.

	(1) Not working	(2) Hours worked	(3) Not working	(4) Hours worked	(5) Not working	(6) Hours worked
	Wife ages 45–64		Wife ages 55–64		Husband age 55–62	
Panel I: Different age limits						
Veteran*post	−0.0160**	0.7803***	−0.0337***	1.1243**	−0.0153*	0.7842***
	(0.0074)	(0.2506)	(0.0082)	(0.4260)	(0.0088)	(0.2478)
Veteran	0.0164***	−0.5570***	0.0310***	−0.9898**	0.0126**	−0.4118**
	(0.0053)	(0.1329)	(0.0073)	(0.3626)	(0.0064)	(0.1761)
Observations	36,762	36,762	23,314	23,314	33,341	33,377
	(1) Not working	(2) Hours worked	(3) Not working	(4) Hours worked	(5) Not working	(6) Hours worked
	Husband not working full-time		Husband not working		Households with no children	
Panel II: Limiting the sample						
Veteran*post	−0.0353***	1.3721***	−0.0430***	1.7639***	−0.0174***	0.6868***
	(0.0057)	(0.2106)	(0.0095)	(0.2712)	(0.0053)	(0.1895)
Veteran	0.0159***	−0.3735***	0.0055	−0.5967***	0.0152***	−0.4792***
	(0.0048)	(0.1142)	(0.0080)	(0.1939)	(0.0032)	(0.1036)
Observations	23,732	23,774	12,751	12,827	36,255	36,279
	(1) Not working	(2) Hours worked	(3) Not working	(4) Hours worked	(5) Not working	(6) Hours worked
	Full veteran interaction		No 2002		Additional controls	
Panel III: Additional checks						
Veteran*post	−0.0200***	0.6017**	−0.0263***	0.9216***	−0.0160**	0.5689**
	(0.0070)	(0.2296)	(0.0059)	(0.1562)	(0.0077)	(0.2294)
Veteran	0.9947***	1.7228	0.0155***	−0.4478***	0.0132***	−0.3719***
	(.0082)	(1.5180)	(0.0046)	(0.1287)	(0.0048)	(0.1206)
Observations	40,477	40,518	34,537	34,587	40,495	40,518

Note: Data from the Current Population Survey. Universe is 1992–2002, omitting 1996 and 1997. Coefficients from estimating Eq. (1). Columns (1) and (3) report the marginal effects from a probit regression. The remaining columns report results from an OLS regression. Regressions include race, and a full set of state, year, age, and education dummies and a constant. Additional Controls reported in (5) and (6) of Panel III include relative age of husband and wife and the presence and number of children under 18. Robust standard errors in parentheses are clustered on veteran and year.

* Significant at 10%.
** Significant at 5%.
*** Significant at 1%.

and we find suggestive but not definitive evidence that this is the case. Additionally, although all women on average increase full-time work and labor force participation, women who were not working in the previous year are more likely to enter the labor force to participate in part-time work or self-employment. Women who worked part-time in the previous year are more likely to increase their hours to full-time work. Women who previously worked full-time do not seem to be as affected by their husband's access to publicly provided health insurance. These results suggest that women in "career" jobs either cannot or will not adjust their own work behavior compared to women in more flexible employment.

We hypothesize that these changes occur because, as found in Boyle and Lahey (2010), when older men obtain health insurance not linked to their employment, they are more likely to leave or plan to leave the full-time for-an-employer labor force, and are thus less likely to be able to provide employer-based insurance to their families. In addition, older men in career jobs are more likely to have a choice between working full-time or not working, whereas women of the same cohort are more likely to be able to provide income from more flexible employment (Johnson, 2004; Long and Jones, 1981). Thus, in order to reach a target income or to provide family health insurance or to self-insure medical expenses, women with a high school education or less increase their labor supply. This effect comes from both women with less education increasing their labor force participation and from these women being less likely to leave the labor force.

We do not find any evidence of work reductions based on complementarity of spousal leisure. This finding is at odds with earlier literature in the U.S. that finds that wives are more likely to retire when husbands are given a positive income shock, such as pension or Social Security changes. There are several possible explanations for these differences. First, unlike the majority of literature on spousal complementarities of leisure, we do not limit to husbands and wives who are both working, or who are both working full-time. As shown in our multinomial probit results, we find labor market entry by women who did not work in the previous year and increased hours for those who worked part-time in the previous year. Although none of our results are significant when limiting to women who worked full time in the previous year, the signs are suggestive of decreased full-time work, increased self-employment, and decreased labor-force participation, and thus not inconsistent with previous work. Second, the average age of the wives in our sample is lower than in much of the work on joint retirement. Thus, some of the couples in our sample may still be planning joint retirement, but at a later date. Finally, health insurance is different than a cash benefit. It is not fungible across couples, and the need to provide health insurance for the wife or to provide additional income to the household may dominate complementarities of spousal leisure for this specific in-kind benefit. Findings that European spouses in countries with universal health insurance both respond to each other's financial incentives (rather than only the husband responding to the wife's incentives as in the U.S.) support the idea that health insurance may be an important element of joint retirement decisions.

These results also differ from the results on retiree health insurance or COBRA, which demonstrate a joint retirement effect for

these types of insurance coverage. However, the policy change is also different than that of coverage that includes the entire family rather than just one spouse.

6.1. Policy implications

When examining the effects of a policy change on labor supply, it is important to keep in mind that direct effects of the policy may be exacerbated, or in this case, mitigated, by spillover effects on family members. Our research suggests that although men's labor force participation would decrease as a result of increased public health insurance coverage, some of this decrease in participation would be made up for by an increase in the labor force participation and hours worked of their wives. In particular, if we assume that the value of the VA insurance coverage is equivalent to the average single-coverage health insurance premium for workers in 2002, then this benefit constitutes a 4.6% positive income shock to the average household in our sample.[35] Since our results indicate that husbands are between 1.5% and 2.3% less likely to work as a result of VA insurance receipt, this finding suggests a labor force participation elasticity of −0.33 to −0.5 for men. Wives, on the other hand are 3–4% more likely to work, implying an elasticity of 0.65–0.87. For wives with high school education or less, the suggested elasticity is approximately 1.[36]

Our results are directly applicable to any policy that provides public health insurance or other valued in-kind benefits to one family member but not another. In addition to potential future VA expansions, our findings provide information about potential effects of a Medicare expansion to earlier ages. Women, who are on average not yet eligible for Medicare when their spouses become eligible (because men are, on average, older than their wives), will likely need to continue working in order to be able to cover the costs for their own health insurance or health care even after the spouse has retired. This need will be especially true for less-educated women, who are less likely to have access to employer-based retiree coverage.

Our results also provide suggestive evidence of the labor supply impact of the "family glitch" in ACA coverage rules. As discussed in Brooks (2014), affordability of employer-based coverage is determined by the cost of single-coverage and not family plans. Thus, a spouse might be left uncovered and ineligible for subsidies in state and federal insurance exchanges if the couple can afford the cost of an employer-based individual plan but not the substantially more expensive family coverage. Because this flaw primarily impacts low-income households, our results imply that the labor supply of uncovered spouses is higher than it would be in the absence of this glitch.

The magnitude of our results could change in the present context either positively or negatively, given the ACA's impact on health care markets. On the one hand, the availability of affordable insurance on the free market suggests less of a need for women, especially higher SES women, to continue working to provide coverage for themselves. On the other hand, the individual mandate increases the cost of foregoing insurance coverage. To the extent that the mandate binds, we would expect to see increased labor supply among those who may have been willing to go without health insurance coverage before. Effects on lower SES women may vary by state, depending upon Medicaid availability. In states that took up Medicaid expansions, wives might be less likely to enter or remain in the labor force, in order to qualify for Medicaid, while wives in states not providing Medicaid access might increase their hours in order to qualify for health insurance subsidies. Finally, health insurance costs have gone up since the 1990s even absent the ACA, increasing the value of an offer of public insurance.

In the context of the ACA directly, our results suggest that when job lock is reduced for one member (or both members) of a couple, it allows for a potential reshuffling of household labor supply. In some instances, particularly in credit-constrained families, it might be optimal for one spouse to increase work while the other decreases labor force participation. This could be the case in households where the husband is older or in poorer health. Thus, this increase in flexibility in allocating work hours has the potential to enhance household welfare.

[35] Similar to Boyle and Lahey (2010), we base the value of insurance coverage on data from the National Compensation Survey: Employee Benefits in Private Industry in the United States, 2002–2003 (U.S. Department of Labor and Bureau of Labor Statistics, 2003). We take the total (employer + employee) single-coverage premium of $3270.60 multiplied by 102% (since COBRA allows employers to charge an extra 2% of the cost for administrative fees). The average income of households in our sample (in 2002 dollars) is $73,174. Thus, the insurance constitutes a 4.6% (3336/73174) income shock.

[36] Low education wives have average household income of $58,215.56 in 2002 dollars and are 5.6–5.7 percent more likely to work as a result of the policy change.

References

Akosa Antwi, Y., Moriya, A.S., Simon, K., 2013. Effects of federal policy to insure young adults: evidence from the 2010 affordable care act's dependent-coverage mandate. American Economic Journal: Economic Policy 5 (4), 1–28.

Autor, D.H., Duggan, M.G., 2007. Distinguishing income from substitution effects in disability insurance. American Economic Review 97 (2), 119–124.

Averett, S.L., Hotchkiss, J.L., 1995. The probability of receiving benefits at different hours of work. American Economic Review 85 (2), 276–280.

Baicker, K., Finkelstein, A., Song, J., Taubman, S., 2014. The impact of Medicaid on labor market activity and program participation: evidence from the Oregon health insurance experiment. American Economic Review 104 (5), 322–328.

Baker, M., 2002. The retirement behavior of married couples: evidence from the spouse's allowance. Journal of Human Resources 37 (1), 1–34.

Blau, D., 1998. Labor force dynamics of older married couples. Journal of Labor Economics 16 (3), 595–629.

Boyle, M., 2009. Health and Utilization Effects of Increased Access to Publicly Provided Health Care: Evidence from the U.S. Department of Veterans Affairs. Holy Cross Working Paper No. 09-02.

Boyle, M., Lahey, J., 2010. Health insurance and the labor supply decisions of older workers: evidence from U.S. Department of Veterans Affairs Expansion. Journal of Public Economics 94 (7–8), 467–478.

Brooks, T., 2014. Health policy brief: the family glitch. Health Affairs (November).

Buchmueller, T.C., Valletta, R.G., 1999. The effect of health insurance on married female labor supply. Journal of Human Resources 34 (1), 42–70.

Chen, S.E., 2012. Spousal Labor Supply Responses to Government Programs: Evidence from the Disability Insurance Program. University of Michigan Retirement Research Center Working Paper #2012-261.

Cohn, J., 2014. The veterans affairs scandal was decades in the making. New Republic, May 21, http://www.newrepublic.com/article/117855/veterans-affairs-scandal-was-decades-making (accessed 25.07.14).

Coile, C., 2004. Retirement incentives and couples' retirement decisions. The B.E. Journal of Economic Analysis and Policy 4 (1), 1–28.

Currie, J., 2003. U.S. Food and Nutrition Programs. In: Moffitt, R. (Ed.), Means-Tested Transfer Programs in the United States. University of Chicago Press, Chicago, IL, pp. 199–289.

Currie, J., Gahvari, F., 2008. Transfers in cash and in-kind: theory meets the data. Journal of Economic Literature 46 (2), 333–383.

Cullen, J.B., Gruber, J., 2000. Does unemployment insurance crowd out spousal labor supply? Journal of Labor Economics 18 (3), 546–572.

Dave, D.M., Decker, S.L., Kaestner, R., Ilayperuma, S.K., 2013. The Effect of Medicaid Expansions in the Late 1980s and Early 1990s on the Labor Supply of Pregnant Women. National Bureau of Economic Research Working Paper #19161.

Dague, L., DeLeire, T., Leininger, L., 2014. The Effect of Public Insurance Coverage for Childless Adults on Labor Supply. National Bureau of Economic Research Working Paper #20111.

Department of Veterans Affairs, 2002. 2001 National Survey of Veterans: Final Report, http://www1.va.gov/VETDATA/docs/SurveysAndStudies/NSV_Final_Report.pdf (accessed 30.07.14).

Duggan, M.G., Rosenheck, R., Singleton, P., 2010. Federal policy and the rise in disability enrollment: evidence for the VA's disability compensation program. Journal of Law and Economics 53 (2), 379–398.

Ellwood, D.E., Adams, K., 1990. Medicaid mysteries. Medicaid and welfare dynamics. Health Care Financing Review (Annual Supplement), 119–131.

Farber, H.S., Levy, H., 2000. Recent trends in employer-sponsored health insurance coverage: are bad jobs getting worse? Journal of Health Economics 19 (1), 93–119.

Fronstin, P., 2000. Sources of health insurance and characteristics of the uninsured: analysis of the March 2000 current population survey. Employee benefit research institute issue brief no. 228.

Gahvari, F., 1994. In-kind transfers, cash grants and labor supply. Journal of Public Economics 55 (3), 495–504.
Gahvari, F., 1995. In-kind versus cash transfers in the presence of distortionary taxes. Economic Inquiry 33 (1), 45–53.
Garrett, B., Kaestner, R., 2014. The Best Evidence Suggests the Effects of the ACA on Employment Will Be Small. Timely Analysis of Immediate Health Policy Issues. Urban Institute.
Garthwaite, C., Gross, T., Notowidigdo, M.J., 2014. Public health insurance, labor supply, and employment lock. Quarterly Journal of Economics 129 (2), 653–696.
Gelbach, J.B., 2002. Public schooling for young children and maternal labor supply. American Economic Review 92 (1), 307–322.
Goux, D., Eric, M., Petrongolo, B., 2014. Worktime regulations and spousal labor supply. American Economic Review 104 (1), 252–276.
Gustman, A., Steinmeier, T., 2000. Retirement in dual-career families: a structural model. Journal of Labor Economics 18 (3), 503–545.
Guy Jr., G.P., Kathleen Adams, E., Atherly, A., 2012. Public and private health insurance premiums: how do they affect the health insurance status of low-income childless adults? Inquiry 49 (1), 52–64.
Ham, J.C., Shore-Sheppard, L.D., 2001. The Impact of Public Health Insurance on Labor Market Transitions. Williams College Working Paper 2001–02.
Ham, J.C., Shore-Sheppard, L.D., 2005. Did expanding Medicaid affect welfare participation? Industrial and Labor Relations Review 58 (3), 452–470.
Hamersma, S., 2013. The effects of Medicaid earnings limits on earnings growth among poor workers. The B.E. Journal of Economic Analysis and Policy 13 (2), 887–919.
Hamersma, S., Kim, M., 2009. The effect of parental Medicaid expansions on job mobility. Journal of Health Economics 28 (4), 761–770.
Ho, J.-H., Raymo, J.M., 2009. Expectations and realization of joint retirement among dual-worker couples. Research on Aging 31 (2), 153–179.
Honig, M., Dushi, I., 2005. Household Demand for Health Insurance: Price and Spouse's Coverage. SSRN Working Paper, http://ssrn.com/abstract=801787.
Hospido, L., Zamarro, G., 2013. Retirement Patterns of Couples in Europe. Documentos de Trabajo, N 1317. Banco de Espana.
Hurd, M.D., 1990. The joint retirement decision of husbands and wives. In: Wise, D. (Ed.), Issues in the Economics of Aging. University of Chicago Press, Chicago, IL, pp. 231–258.
Jacob, B., Ludwig, J., 2012. The effects of housing assistance on labor supply: evidence from a voucher lottery. American Economic Review 102 (1), 272–304.
Johnson, R.W., 2004. Do spouses coordinate their retirement decisions. Boston College Center for Retirement Research Issue in Brief (19), 1–8.
Kapinos, K.A., 2009. Changes in spousal health insurance coverage and female labor supply decisions. Forum of Health Economics and Policy 12 (2), 1–24.
Kapur, K., Rogowski, J., 2011. How does health insurance affect the retirement behavior of women? Inquiry 48 (1), 51–67.
Klein, R.E., Stockford, D.D., 2001. Data on the Socioeconomic Status of Veterans and on VA Program Usage, www1.va.gov/VETDATA/docs/SpecialReports/sesprogramnet5-31-01.ppt (accessed 29.07.14).
Kolstad, J.T., Kowalski, A.E., 2014. Mandate-Based Health Reform and the Labor Market: Evidence from the Massachusetts Reform. National Bureau of Economic Research Working Paper #17933.
Leonesio, M., 1988. In-kind transfers and work incentives. Journal of Labor Economics 6 (4), 515–529.
Long, J.E., Jones, E.B., 1981. Married women in part-time employment. Industrial and Labor Relations Review 34 (3), 413–425.
Lundberg, S., 1985. The added worker effect. Journal of Labor Economics 3 (1), 11–37.
Mare, R.D., 1991. Five decades of educational assortative mating. American Sociological Review 56 (1), 15–32.
Moffitt, R.A., 2002. Welfare programs and labor supply. In: Auerbach, A.J., Feldstein, M. (Eds.), Handbook of Public Economics, vol. 4. New Holland, Amsterdam, pp. 2393–2430.
Moffitt, R.A., Wolfe, B., 1992. The effect of the Medicaid program on welfare participation and labor supply. Review of Economics and Statistics 74 (4), 615–626.
Montgomery, E., Navin, J.C., 2000. Cross-state variation in Medicaid programs and female labor supply. Economic Inquiry 38 (3), 402–418.
Murasko, J.E., 2008. Married women's labor supply and spousal health insurance coverage in the United States: results from panel data. Journal of Family and Economic Issues 29 (3), 391–406.
Nelson, C.T., Mills, R.J., 2001. The March CPS Health Insurance Verification Question and its Effect on Estimates of the Uninsured. U.S. Census Bureau, http://www.census.gov/hhes/www/hlthins/publications/verification.html (accessed 28.06.11).
Olson, C.A., 1998. A Comparison of Parametric and Semiparametric Estimates of the Effect of Spousal Health Insurance Coverage on Weekly Hours Worked by Wives. Journal of Applied Econometrics 3 (5), 543–565.
Olson, C.A., 2002. Do workers accept lower wages in exchange for health benefits? Journal of Labor Economics 20 (2), S91–S114.
Pencavel, J., 1998. Assortative mating by schooling and the work behavior of wives and husbands. American Economic Review 88 (2), 326–329.
Ross, J.S., Keyhani, S., Keenan, P.S., Bernheim, S.M., Penrod, J.D., Boockvar, K.S., Federman, A.D., Krumholz, H.M., Siu, A.L., 2008. Use of recommended ambulatory care services: is the veterans affairs quality gap narrowing? Archives of Internal Medicine 168 (9), 950–958.
Royalty, A.B., Abraham, J., 2006. Health insurance and labor market outcomes: joint decision-making within households. Journal of Public Economics 90 (8–9), 1561–1577.
Stancanelli, E., 2012. Spouses' Retirement and Hours of Work Outcomes: Evidence from Twofold Regression Discontinuity. Documents de travail du Centre d'Economie de la Sorbonne 12074.
Spletzer, J.R., 1997. Reexamining the added worker effect. Economic Inquiry 35 (2), 417–427.
Stephens Jr., M., 2002. Worker displacement and the added worker effect. Journal of Labor Economics 20 (3), 504–537.
Strumpf, E., 2011. Medicaid's effect on single women's labor supply: evidence from the introduction of Medicaid. Journal of Health Economics 30 (3), 531–548.
Tomohara, A., Lee, H.J., 2007. Did state children's health insurance program affect married women's labor supply? Journal of Family and Economic Issues 28 (4), 668–683.
U.S. General Accounting Office, 1996. VA Health Care: Efforts to Improve Veterans' Access to Primary Care Services. GAO/T-HEHS-96-134. U.S. Government Printing Office, Washington, DC.
U.S. General Accounting Office, 1999. Veterans' Affairs: Progress and Challenges in Transforming Health Care. GAO/T-HEHS-99-109. U.S. Government Printing Office, Washington, DC.
U.S. General Accounting Office, 2003. VA Health Care: Framework for Analyzing Capital Asset Realignment for Enhanced Services Decisions. GAO-03-1103R. U.S. Government Printing Office, Washington, DC.
Weaver, D.A., 1994. The work and retirement decisions of older women: a literature review. Social Security Bulletin 57 (1), 3–24.
Winkler, A.E., 1991. The incentive effects of Medicaid on women's labor supply. The Journal of Human Resources 26 (2), 308–337.
Witman, A., 2015. Public health insurance and disparate eligibility of spouses: the Medicare eligibility gap. Journal of Health Economics 40 (0), 10–25.
Wolfers, J., 2006. Did unilateral divorce laws raise divorce rates? A reconciliation and new results. American Economic Review 96 (5), 1802–1820.
Yelowitz, A.S., 1995. The Medicaid notch, labor supply, and welfare participation: evidence from eligibility expansions. The Quarterly Journal of Economics 110 (4), 909–939.