CENTER for RETIREMENT RESEARCH at BOSTON COLLEGE

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DOES PUBLIC HEALTH INSURANCE AFFECT HOW MUCH PEOPLE WORK?

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Introduction

Most Americans get their health insurance through their employer, so they may be reluctant to leave a job if such a change affects their coverage. This situation is known as "job lock," which may be a particular concern for those with health problems.[1] As a result, expansions of public health insurance, which are not tied to a job, could reduce job lock and result in some workers scaling back from full- to part-time work or leaving the labor force entirely.

One way to estimate the effect of public health insurance on job lock is to look at policy changes that offer a "natural experiment." This *brief*, based on a recent paper, uses the introduction of Medicare Part D in 2006 to assess the extent to which the availability of drug coverage not tied to an employer induces older individuals to work less.[2]

The discussion proceeds as follows. The first section provides brief background on Medicare Part D. The second section describes the data and sets up the methodology. The third section shows trends in labor force activity among the elderly before and after 2006. The fourth section summarizes the main results. The final section concludes that, prior to the introduction of Part D, "job lock" was a significant concern for individuals who would otherwise have lost their employer drug insurance at age 65. While this group was a relatively modest portion of the total population of older Americans, this result does suggest that having the option of public health insurance can reduce a barrier to labor force transitions.

Medicare Part D

Medicare has provided universal health insurance to all Americans age 65 and over since 1966. However, in its first 40 years, the program did not generally provide insurance for prescription drugs.[3] This omission grew more significant over time as the effectiveness of drugs, as well as their costs, increased. To address this large uninsured risk, Medicare was expanded in January 2006 to cover prescription drugs through the Part D program.

The introduction of Part D was particularly important for people considering retirement. Virtually all employer health insurance plans cover prescription drugs for their current employees.[4] Before Part D, drug insurance options for retirees were limited if they did not have employer-provided retiree health insurance (RHI). Thus, they would be vulnerable to high drug costs if they left their employer plan.

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In short, before 2006, access to drug coverage for those 65 and older was limited mostly to individuals with employer plans. After 2006, they could get drug coverage through Medicare. The question is whether the introduction of such coverage affected the labor force decisions of older workers.

Data and Design

The data used in the analysis are from the *Health and Retirement Study*, a large panel of Americans over age 50 and their spouses. It was started in 1992, and follows up with its subjects every two years.

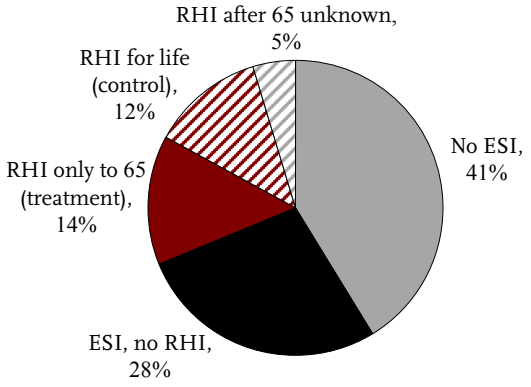
To isolate the effect of the introduction of Medicare Part D on retirement, the study limits the sample to individuals around age 65 (ages 55-68)[5] and around the year 2006 (years 2000-2010). This restriction provides a group of individuals ages 55-64 who saw no change in their drug insurance availability, and a group of individuals ages 65-68 who had no access to Part D coverage in 2000-2004 and acquired it in 2006-2010. This approach allows for an estimation of the effect of subsidized drug insurance on labor outcomes for individuals ages 65-68.

Before 2006, the change in work rates at age 65 captures the baseline pattern of work over the life-cycle (e. g., the natural decline in work through aging, and institutional factors like access to Social Security). After 2006, the change in work rates at age 65 includes the same life-cycle trends, but also the effect of the new subsidized drug insurance. The difference between the change in work at age 65 after 2006 and the change before 2006 isolates the effect of Part D on individuals' labor force decisions.

Before 2006, not everyone faced an incentive to keep working in order to maintain insurance coverage. Workers at firms that did not offer employer-sponsored insurance (ESI) certainly would not be affected. Likewise, individuals who have retiree health insurance (RHI) for life from their employer should not be affected: both before and after Part D they can retire freely without losing their drug coverage.

Figure 1 shows the breakdown of the HRS sample by type of employer insurance coverage. To focus on a relevant population, the study restricts attention to individuals who have RHI, and divides them into two groups. The first is a treatment group made up of those who have RHI *only until age 65* (the solid red portion of Figure 1). This arrangement is fairly common, applying to about half of those with RHI, as everyone gains access to Medicare at age 65. Before 2006, such individuals who retired at or after 65 would lose their drug coverage when they transitioned from their employer plan to Medicare. The only way to keep their drug coverage was to keep working. After 2006, they could keep their coverage past age 65 through Medicare regardless of when they retired.

Figure 1. Composition of HRS Sample Ages 55-68 by Employer Health Insurance Status



Note: Numbers reflect person-year observations.
Source: Author's estimates from the *Health and Retirement Study* (HRS) (2000-2010).

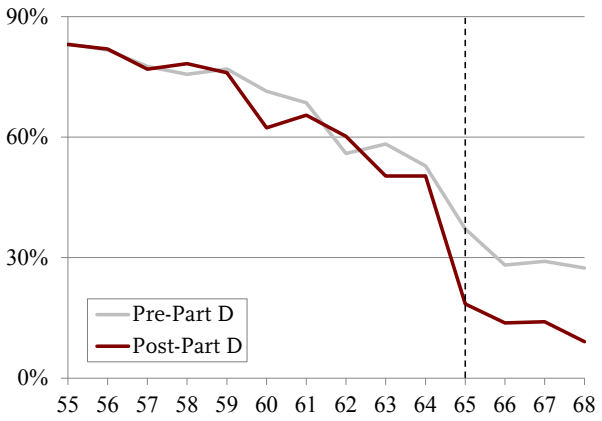
The second group, which functions as a control group, is those who have RHI for *life* (in shaded red). They form a good control group, as they are quite similar to the treatment group. Both groups have RHI; they only differ in whether that insurance is limited to age 65 (treatment) or not (control).[6] The control group is also observed at the same ages as the treatment group in the same years, so if something unobservable happens to change the labor outcomes of 65-68 year olds after 2006, they would experience that same shock and could be used to control for it.[7] Robustness checks show that using those with no ESI (in solid gray) as an alternative control group yields similar results.[8]

Retirement Patterns Before and After 2006

An initial way to assess the potential impact of Part D and evaluate the experimental design is to simply look at the patterns in full-time work rates by age before and after 2006.

Figure 2 shows the pattern for the treatment group alone, where the gray line indicates those with RHI only to age 65 in the period before 2006, while the red line shows the same insurance-status group after 2006 (these two lines represent different birth-year cohorts).[9] Those observed at ages younger than 65 move in lockstep both before and after 2006, suggesting that in the absence of Part D they would continue to move in parallel throughout their lives. However, at age 65 a much sharper decline is evident after 2006 for the treatment group relative to the earlier period, suggesting that Part D may have caused a large decline in the rate of full-time work.

Figure 2. Percentage of Individuals with RHI Only Until Age 65 Who Work Full Time, Pre- and Post-Medicare Part D, by Age

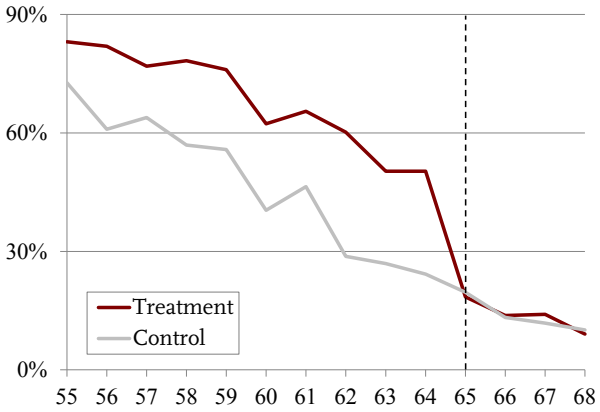


Note: For clarity, pre-2006 observations are shifted up so the mean of those under 65 is the same before and after 2006.
Source: Author's estimates from the 2000-2010 HRS.

Figure 3 displays the evolution of full-time work for both the treatment and control groups, after 2006. As with the treatment group in isolation, the parallel movement between the two groups before age 65 indicates that the groups had similar employment patterns before Medicare eligibility.

As expected, no marked change occurs in the decline of employment at age 65 for the control group; the pattern for this group looks similar before and after this age. For the treatment group, however, the decline exactly at 65 after 2006 is dramatically larger than for the control group. This result is consistent with the notion that Part D reduced job lock, affecting those who might have been constrained but having no effect on those for whom no job lock was possible.

Figure 3. Percentage of Individuals Who Work Full Time, Treatment and Control Groups, After 2006



Source: Author's estimates from the 2000-2010 HRS.

So far, Figures 2 and 3 suggest that Part D substantially reduced job lock for the treatment group; however, to test whether these effects are statistically significant and control for other factors, a regression analysis is needed. The basic estimation equation is:

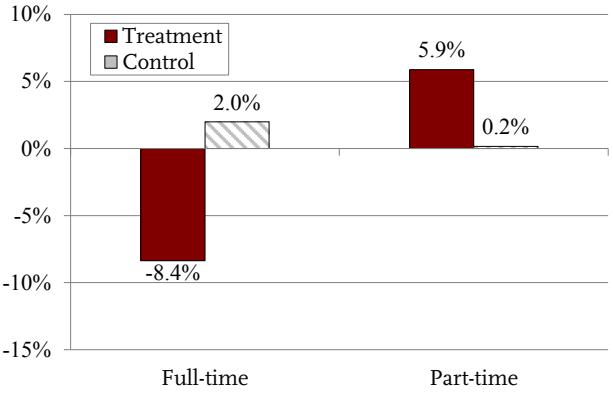
Probability of working = f (over65, post2006, treatment, personal characteristics), with interactions of: (over65)(post2006), (over65)(treat), (post2006)(treat), and (over65)(post2006)(treat)

The same equation is estimated with several different dependent variables that all measure aspects of an individual's labor market activity. The two measures highlighted in the results below are the probability of working full time and the probability of working part time.[10] The independent variables identify whether the individual was over 65; was observed post 2006; and was part of the treatment group. The control variables include demographic variables, health variables, and age, year, and individual fixed effects. The main coefficient of interest is on the interaction of (over65)(post2006)(treat), which compares the change in the dependent variable at age 65, before and after 2006, for those whose RHI was limited to under 65 (treatment group) to those who had RHI for life (control group).

Regression Results

Figure 4 shows the key regression results for the effects of Part D on full- and part-time work.[11] Part D led to a statistically significant decline of 8.4 percentage points in full-time work among individuals who were dependent on their employer insurance for drug coverage. This estimate is large; the full-time work rate at the baseline was 35 percent, so Part D led to a 24-percent reduction from that average rate. Of course, this result does not mean that all of the affected individuals moved into retirement. Instead, they may have shifted to part-time work.[12] Indeed, part-time work did increase in the treatment group by 5.9 percentage points out of the 8.4-percentage-point overall effect (see Figure 4). Thus, the reduction in full-time work can be decomposed into 70 percent switching into part-time work and only 30 percent going into full retirement.[13]

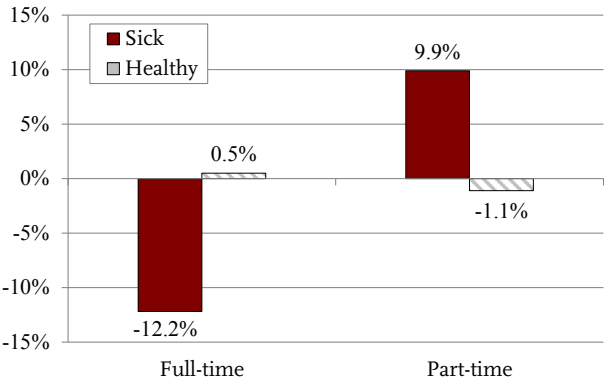
Figure 4. Estimated Effect of Part D on Labor Outcomes for Treatment and Control Groups



Note: Solid bars are statistically significant.
Source: Author's estimates from the 2000-2010 HRS.

The results shown in Figure 4 are driven almost entirely by less healthy individuals. Sick individuals (those with chronic health conditions such as diabetes or heart disease) see a decline in full-time work of 12.2 percentage points and an increase in part-time work of 9.9 percentage points (see Figure 5). In contrast, healthy individuals display no statistically significant response to Part D in their labor outcomes.

Figure 5. Estimated Effect of Part D on Labor Outcomes of the Treatment Group by Health



Note: Solid bars are statistically significant.
Source: Author's estimates from the 2000-2010 HRS.

Conclusion

Overall, decoupling labor force decisions from insurance decisions can affect labor supply among those near retirement. This study finds that, before the availability of Medicare Part D, many individuals worked past age 65 to maintain access to their employer-sponsored drug insurance. While this barrier to retirement is only relevant for those who have employer-sponsored health insurance, it seems to provide a large incentive to delay retirement for this group.

Knowing the pervasiveness of job lock is important for assessment of public policies that weaken the link between employment and insurance.[14] If policies remove an inefficient constraint on retirement, they could be beneficial. On the other hand, they may be costly if they reduce employment and, correspondingly, tax revenue. The large estimated labor responses imply a high valuation by near retirees on the health insurance subsidies in Part D. However, they also indicate that the fiscal cost of these subsidies is larger than their cost on paper when taking into account the reduced taxable earnings that result.[15]

Endnotes

1 For a comprehensive review of the early literature on this subject, see Gruber and Madrian (2004). For more recent papers see Boyle and Lahey (2010), who look at veterans, and Garthwaite, Gross, and Notowidigdo (2014), who consider the Medicaid-eligible population. These papers find similar magnitude effects on labor force participation as the study summarized in this *brief*.

2 Wettstein (2016).

3 Medicare did cover some drugs, such as those provided in hospitals, through Medicare Part A. Furthermore, Medigap and HMO plans covering drugs existed, but provided limited insurance for high premiums, and were chosen only by a small minority of those eligible.

4 Kaiser Family Foundation (2014).

5 Construction of the treatment and control groups relies on questions regarding retiree coverage which are not asked of everyone. As a result, the oldest individuals who can be included are those up to age 68. For details, see the Data Appendix in Wettstein (2016).

6 The treatment and control groups are also similar on observable characteristics such as demographics, occupation, and industry. For details, see Wettstein (2016).

7 In practice, no such shock is found and this control group merely serves to reinforce the validity of the estimates found in the treatment group alone.

8 Observations in shaded gray are not considered in the study as they cannot be definitively allocated between the treatment and control groups. Those in black are not included because they are not very similar to the treatment group.

9 Due to secular increases in labor supply among the elderly over time, the mean full-time work rate is higher after 2006 relative to before 2006. In this figure, the pre-2006 observations are shifted up so the mean of those below age 65 is the same before and after 2006. This shifting is done for clarity. The graph with the raw means can be seen in Wettstein (2016).

10 Other labor outcomes considered are weekly hours worked and earnings; all of the labor outcome results tell a consistent story.

11 For complete results, see Appendix Table A1.

12 Few employers offer health benefits to part-time workers (Kaiser Family Foundation, 2014), so the introduction of Part D could have made such a shift attractive to those ages 65 or over.

13 All results are robust to having no control group, or using a different control group of individuals with no employer insurance; excluding the Great Recession years; restricting the sample to ages 62-68; and to using other sets of control variables.

14 For example, the Congressional Budget Office (2014) estimated a reduction of 1.5-2 percent in hours worked due to the Affordable Care Act, partially due to relaxation of retirement lock. This estimate is based on Gruber and Madrian (1995).

15 See Wettstein (2016) for more detailed analysis.

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APPENDIX

Table A1. Estimated Effect of Part D Eligibility on Labor Outcomes, Overall and by Health

Variables	Full-time work			Part-time work		
	Full sample	Sick	Healthy	Full sample	Sick	Healthy
Treatment effect on treatment group	-0.0836***	-0.122***	-0.00536	-0.0596*	-0.099***	-0.0113
	(0.0313)	(0.0374)	(0.0652)	(0.0305)	(0.0380)	(0.0586)
Treatment effect on control group	0.0199	0.0416	-0.0269	-0.00521	-0.0221	0.0353
	(0.0217)	(0.0256)	(0.0446)	(0.0216)	(0.0266)	(0.0428)
Health controls	Yes	No	No	Yes	No	No
Observations	15,382	10,733	4,649	15,382	10,733	4,649
R-squared	0.219	0.21	0.217	0.013	0.014	0.035

Notes: Results are statistically significant at the 1-percent (***) or 10-percent (*) level. All equations include age and year interacted with treatment dummies, individual fixed effects, and demographic controls.
Source: Author's estimates from the 2000-2010 HRS.

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