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The Effects of the Social Security Amendments of 1983 on Employment Status,
Alcohol Consumption, and Depression

by

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of the requirements for the degree of
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Abstract

Nearly four decades ago, Congress passed the Social Security Amendments of 1983. The changes were significant, and they pressured people to delay retirement. In this thesis, I use individual-level data from the Annual and Social Economic Supplement of the Current Population Survey and the Health Retirement Study to analyze the effects of the amendments. The amendments affect individuals at the same age, but across different years. Year of birth determines treatment by the amendments. I control for year of birth and age effects in a difference-in-difference model and interact treatment with age to identify the effects of the amendments on employment status, alcohol consumption, and depression. I find ambiguous evidence of the effects of the amendments on employment status, no evidence of an effect of the amendments on alcohol consumption, and questionable evidence of an effect on depression.

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1. Introduction

Social Security provides a large amount of income for older Americans, especially those who do not retire early. Adequate planning may allow some Americans to retire early, but if the full retirement age increases, the amount of planning will too.

Nearly four decades ago, Congress was faced with an aging population and a social security program that was bordering insolvency. In order to encourage labor force participation among the elderly and to delay retirement claims, they passed a set of amendments that altered the way people in their prime working years prepare for retirement. The Social Security Amendments of 1983 changed retirement policy in three major ways. It increased the full retirement age (FRA) from 65 to 67, increased the delayed retirement credit (DRC), and removed the earnings test for those ages 65-69.

The FRA is the age a person can receive the standard amount of Social Security benefits at retirement. Claiming before the FRA decreases a person's monthly social security benefits. The earliest an individual can claim benefits is age 62. The amendments increased the FRA from 65 to 67 over a 22 birth year period. Those born in 1937 or prior have an FRA of 65. Until 1943, every birth year after has an FRA two months later than the birth year prior. For example, someone born in 1938 has an FRA of 65 and two months. The FRA remains at 66 for the birth years 1943-1952. From there the amendments increased the FRA again to 67 in two month increments and it remains there for those born in the year 1960 and after. The first birth cohort to be treated with the 1983 amendments was the 1938-1939 birth cohort. They turned 65 and two months in 2000. The effects of the amendments are ongoing.

The DRC increased the amount of benefits received for each year an individual delays retirement. DRC is at 4 percent for those born in 1927 and 1928. The amendments increased the DRC by .5 percent every two years starting with birth year 1929. From birth year 1943 and onward, DRC equals 8 percent.

Increasing the FRA and decreasing the amount of benefits received before the FRA means retiring at the earliest age costs more in terms of total benefits foregone. This encourages people to retire later. While the amendments were created to affect labor force participation, they might also affect health outcomes and lifestyle choices.

The previous literature examines the effects of the amendments on labor force participation. Mastrobuoni (2009) and Behaghel and Blaue (2012) find that the increase in the FRA increases age of retirement. Pingle (2006) finds that the increase in DRC increases the probability of being employed. Deshpande, Fadlon, and Gray (2020) use administrative data from the Social Security Administration's Continuous Work History Sample to find that the increase in the FRA does not lead to an increase in retirement. Therefore, the effects of the amendments on retirement and

employment are still up for debate.

Research on the effects of social security amendments generally does not connect directly to health, but the literature examining the general effects of retirement on health is insightful. Chung, Domino, and Stearns (2009) and Wang, Steier, and Gallo (2014) find that retirement causes weight gain and increases in alcohol consumption. König, Lindwall, and Johansson (2019) examine the effect of involuntary retirement on health and find a negative relationship between the two.

In this thesis, I analyze the effects of the amendments on employment using two data sets. I also analyze the effects of the amendments on alcohol consumption and depression.

The Annual Social and Economic Supplement of the Current Population Survey (ASEC CPS) provides annual data on employment status and demographic information. The Health and Retirement Study (HRS) provides biannual data similar to the ASEC CPS, but with additional information on health-related variables and retirement.

I estimate difference-in-difference regressions to examine the effects of the increase in FRA from 65 to 66 and the increase in DRC on employment, alcohol consumption, and depression. Year of birth determines those affected by the amendments, the post-reform group. Age determines if treatment has occurred. To identify the effects of the policy change, I control for year of birth and age effects and interact cohort effects with age effects. The interactions at ages 65 and 66 is the difference between the post-reform and pre-reform group due to the increase in FRA. I compare the retirement profiles of the pre-reform and post-reform group to check parallel trends. Since the amendments affect individuals at a certain age rather than in a certain year, this changes how the difference-in-difference model is set up. The model does not include year variables, but instead includes macroeconomic variables to control for time effects.

The evidence of the effect of the amendments on employment is ambiguous. The results differ across the two data sets. I find no evidence of an effect of the amendments on alcohol consumption, and questionable evidence of the effect of the amendments on depression.

2. Literature Review

Employment

Many countries face the issues that come with an aging population. A major concern is funding the social programs that give their retired population an income to live on. A common method to fund the program is to increase employment among the elderly. This increases contributions to the program and postpones the claims that are paid out.

Norway implemented a policy that decreased the earliest age of retirement and encouraged working among those that were eligible to retire. Hernæs, Markussen, Piggott, and Røed (2016) compare two birth cohorts with different labor incentives. They use a within-group linear model to regress employment outcomes, such as retired or hours worked, on a variable indicating treatment as well as demographic and human capital variables. They find that the new incentives increase labor supply. They also find that decreasing the earliest age of retirement has no effect on labor supply.

Staubli and Zweimüller (2013) use a linear model to estimate the effects of Austria increasing the earliest age of retirement on the probability of being employed and unemployment insurance claims. They find that the policy increases the probability of employment and the amount of unemployment insurance claims. Their findings are not different from most papers that analyze retirement policy change in the United States.

Much of the literature that examines the effects of the amendments in the United States is concerned with the effects on labor supply or on social security benefit claims. Papers analyzing the effects on labor supply are concerned with employment, whereas papers analyzing the effects on benefit claims behavior do not necessarily take into account whether or not someone is still employed while receiving benefits. Papers analyzing the effects on benefit claims behavior provide insight on how to separate the different amendments and what to reasonably expect with regards to labor supply outcomes.

Those affected by the FRA increase were not able to retire until 2000, so papers published before 2000 were not able to measure the impacts of the reform. Instead they predicted what would happen. For example, Gustman and Steinmeier (1985) predict that at age 65, people will be more active in the labor force than prior to the reform, but part time employment will drop relative to full time employment.

Papers published after 2000 analyze the impacts of the reform. Since the amendments followed a staggered rolled out that largely depends on birth year, the papers often separate the rule changes by using select birth years or sample years.

Pingle (2006) uses panel data from the Survey of Income and Program Participation to examine the effects of the DRC increase on employment of men over age 65. The data span the years 1985-2003. Since the DRC changes began in 1995 and the first effects of the increase in FRA did not occur until 2000, Pingle is able to disentangle the two effects. The paper employs a linear panel data model with the dependent variable being employed or not. Pingle includes year and age fixed effects along with DRC indicator variables in the model. The paper finds that increases in the DRC increases the employment rate.

Duggan, Dushi, Jeong, and Li (2021), examine the effects of DRC increases on benefit claims and control for FRA policy changes by selecting sample years where the FRA does not change. The paper uses data from the Social Security

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Administration. They use a difference-in-difference strategy to compare benefit claims of people born right after a DRC increase to people born right before a DRC increase. To control for the effect of the month on claiming decisions, they use periods where there is no DRC change as placebos. They use a linear model and control for month-of-birth fixed effects, a “January window” fixed effect to control for macroeconomic conditions or other factors, and other individual level variables. The evidence shows that increasing the DRC delays benefit claims.

Mastrobuoni (2009) finds that increasing the FRA leads to increases in retirement age. Most papers find that the amendments did what they were designed to do, delay benefits claims and/or increase labor supply, but a recent paper analyzing the change in FRA finds something different.

Deshpande, Fadlon, and Gray (2020) examine the effects of the increase in FRA using data from the Social Security Administration. They use a sample of people born between 1935-1945 and who claim benefits before age 70. The birth year range allows them to compare pre-reform groups with FRA of 65 to the different post-reform groups who have FRAs that increase by two months annually from 1938-1942 and FRA of 66 from 1943-1945. This birth year range also limits DRC variation, making it easier to isolate the effect of the FRA increase. The paper graphically compares the claiming rates and retirement rates of the pre-reform group to the post-reform group with FRA of 66. They define retirement as having earnings in the current period and zero earnings in the following period. They find that claiming rates for the post-reform group spike at 66, but the retirement rates do not. Instead the retirement rate spikes at the old FRA of 65.

The paper uses a regression discontinuity design to estimate the effects of the two month increases in FRA on benefit claiming age and retirement. They find that increasing the FRA increases the claiming age, but not retirement. A similar paper, Behaghel and Blaue (2012), analyzes HRS data to examine the effects of the FRA increase and how the reform should be framed. They use individuals born between 1931-1942. They graphically compare the cohorts and find that with an increase in the FRA, there is a spike in retirement at the old FRA of 65. Unlike Deshpande, Fadlon, and Gray (2020), Behaghel and Blaue (2012) find a spike in retirement at the new FRA. How the papers define retirement might attribute to the conflicting findings. In Behaghel and Blaue (2012), retirement status is self reported during an interview.

Lifestyle Choices and Health Outcomes

The literature emphasizes labor outcomes and benefit claims because these are what motivated amending social security. What has not been explored much in the literature is the effect of the amendments on lifestyle and health choices. Researchers have studied the effects of retirement on mental health, health outcomes, and lifestyle choices.

The 1983 Social Security Amendments act encourages people to continue working past the old FRA. The individuals are not technically forced to work longer, but they are pressured to do so. Bonsang and Klein (2012) find that people who retire voluntarily have more free time and more time to invest in their health. They also find that those who retire involuntarily, are retired because they are unable to find work, are less satisfied with their free time than those who retire voluntarily. Maimaris, Hogan, and Lock (2010) review the literature that examines the relationship between working/volunteering past FRA and its effects on mental health. They find no negative effects on mental health of those who work beyond retirement. This implies working past full retirement age may not lead to negative lifestyle choices and health outcomes. They do not specify if the studies differentiated between forced or voluntary retirement/employment.

In a study of older individuals in Sweden, König, Lindwall, and Johansson (2019) find that involuntary retirement leads to worse health for lower educated individuals compared to higher educated individuals. Those who retired involuntarily did so for physical reasons and were more likely to be less educated. Therefore, König, Lindwall, and Johansson (2019) establish a relationship between low education and worse health outcomes in retirement via low education's effects on physical health and retirement. If those who delay retirement in the United States do so because of policy pressure brought on by the 1983 Social Security Amendments, then it is possible the FRA increase affects their health outcomes and lifestyle choices as well.

The literature documents general effects of employment status change on health outcomes and lifestyle choices. Chung, Domino, and Stearns (2009) find that retirement leads to weight gain among those who are already overweight, have less wealth, and retire from physically demanding jobs. Wang, Steier, and Gallo (2014) find that retirement increases weekly alcohol consumption among men. These studies do not examine is the difference in health outcomes/lifestyle choices between individuals who undergo voluntary employment status change and individuals who undergo involuntary employment status change. Deb, Gallo, Ayyagari, Fletcher, and Sindelar (2011) analyze the effect of job loss (an involuntary employment status change) on BMI and alcohol consumption and find that those whose BMI or alcohol consumption increased in response to job loss were already in a "problematic range" for these behaviors prior to job loss. These studies reveal that employment status change affects health outcomes and lifestyle choices.

The effects of the 1983 Social Security amendments on labor supply and benefits claims are well documented and the consensus is that the amendments did increase benefit claims. The literature mostly suggests that amendments also increased retirement. The effects on health outcomes/lifestyle choices are not well documented. Previous research reveals a negative relationship between retirement and health outcomes/lifestyle choices and a positive relationship between working/volunteering past FRA and mental health. What this previous research does

not consider is the effects of delayed retirement due to policy pressure. My thesis expands the literature by examining the effects of a policy-pressure induced delay in retirement on employment status, alcohol consumption, and depression.

3. Data

There are two primary data sources. The first source is the Annual Social and Economic Supplement of the Current Population Survey (ASEC CPS). The ASEC CPS provides individual-level data annually on employment status and demographic variables such as age, race, and sex. The sample spans the survey years 1996-2017.

The second source is the Health and Retirement Study (HRS), which provides individual-level panel data biannually. It contains information similar to the ASEC CPS as well as information on the individual and their spouse's health, health expenditures, lifestyle choices, and retirement. The sample spans the years 1996-2018.

In both samples, year of birth determines the FRA and DRC of each individual. The pre-reform group is unaffected by the change in the FRA and were born in years 1928-1937. The post-reform group is affected by the change in the FRA and were born in years 1943-1952. I keep individuals between the ages 60 and 69 for analysis.

A dummy variable indicates if an individual is in the pre-reform group (control group) or the post-reform group (treatment group) based on the individual's year of birth. A second variable indicates DRC based on year of birth. Table 1 displays years of birth and their corresponding DRCs and FRAs.

In both samples, I exclude individuals not born within the two year-of-birth ranges. Individuals born between the two year of birth ranges have FRAs that require monthly data for analysis. For this reason, they are left out. Individuals born after 1952 have an FRA higher than 66, so they are left out.

The U.S. Bureau of Economic Activity (BEA) and the U.S. Bureau of Labor Statistics (BLS) provide macroeconomic variables (Bureau of Economic Analysis 2022; U.S. Bureau of Labor Statistics 2022). The BEA provides information on the Real GDP from years 2000-2018. The BLS provides information on the unemployment rate of people between the ages 25 and 34 from the years 2000-2018.

ASEC CPS

The ASEC CPS has limitations with regards to the accuracy of age and year of birth. The ASEC CPS conducts its surveys in the middle of March and provides information on the year prior to survey. To adjust for this, I subtract one from the year variable to find the working year. The age variable uses age at last birthday. This means if someone was surveyed in the year 2016 and they said they were 65 years old, they could have turned 65 at any time from the end of March 2015 to the beginning of March 2016. If they turned 65 any time past June 2015, then they would have spent most of 2015 at age 64. Since it is more likely they turned 65

Table 1. Delayed Retirement Credit and Full Retirement Age by Birth Year

Year of Birth	Delayed Retirement Credit	Full Retirement Age
1928	4.0	65
1929-1930	4.5	65
1931-1932	5.0	65
1933-1934	5.5	65
1935-1936	6.0	65
1937	6.5	65
1943-1952	8.0	66

Delayed retirement credit is in percent.

between June 2015 and March 2016, I subtract one from the age variable to adjust for the more likely case that they were 64 for most of 2015.

The ASEC CPS does not provide information on year of birth. I subtract age from working year and then subtract an additional year to estimate year of birth.

There is a limitation with the accuracy of the employment status variable as well. The survey asks the individual about their employment status in the working year. There is no mention in the codebook if an individual who says they were retired during the working year was retired for the full year or part of it. There is no way to adjust for this. Three binary variables indicate the individual's employment status: retired, employed part-time, and employed full-time.

The inaccuracies in age and employment status measurements can affect the results of the analysis. If the changes made to age result in someone's age being measured as younger than they are, say 64, and they report they were retired in the working year, then the data will show a retired 64 year old, when really it should show a retired 65 year old. If someone was 64 when they claimed retirement in the working year, but I mark them as 65, then the data will show a retired 65 year old when it should show a retired 64 year old. Given that it is more likely they are younger in most of the working year than they are in the sample year, my adjustment to age should produce a more accurate estimate of age, year of birth, and the age/employment status relationship.

An advantage of the ASEC CPS is its larger samples. This is why I use it for analysis despite its measurement issues.

There are 226,102 observations. The sample survey years are from 1996-2017. The work years are from 1995-2016. The sample includes people between the ages 60 and 69.

The pre-reform and post-reform groups are similar when they are younger than

their FRA and when they are at their FRA and older. Table 2 contains information on age, sex, employment status, race, if the individual has a partner, and self-reported health. There are 226,102 observations.

The first two columns of Table 2 show similar distributions of key variables for both groups at ages younger than their FRA. The pre-reform group's FRA is 65 and the post-reform group's FRA is 66. Before their FRA, the two groups have a similar mean age, sex, and race. The largest difference in the employment status distributions is the percent of individuals who are retired and who are employed full-time. A possible explanation for this difference is that the pre-reform group turned 62 between the years 1990 and 1999, whereas the post-reform group turned 62 between the years 2005 and 2014. The post-reform group became eligible for early retirement during the Great Recession from 2007-2009. Therefore, those who planned for an early retirement might have had to delay.

The third and fourth columns of Table 2 display summary statistics for the two groups at their FRA and older. The difference in percent of retired people decreases by 3 percentage points. The amount of retired people increases overall from the first two columns to the last two columns.

HRS

The HRS provides biannual panel data, but I treat it as a repeated cross section. The information in the data is from the time of survey. The surveys take place every two years. The data contains information on year of birth. I estimate age by subtracting year of birth from survey year.

Coding of employment status in the HRS is similar to the ASEC CPS except the HRS contains an additional outcome: partly retired. The HRS codebook states that an individual who is working part time and mentions retirement at all during the interview is marked as partly retired. The HRS codebook does not mention them receiving retirement benefits. I count them as retired before creating a set of binary variables to indicate employment status.

The HRS also provides information on alcohol consumption and depression. The interviewer asks the individual to estimate how many days a week they consume alcohol for the three months leading up to the interview. If the answer is greater than zero, the interviewer asks them to estimate the number of alcoholic drinks they consume per day. The interviewer also asks if the individual has felt depressed during the week leading up to the interview.

The sample contains 33,365 observations. It spans the years 1996-2018. It contains individuals between the ages 60 and 69.

Comparisons of the pre-reform and post-reform groups reveal similar distributions of age, sex, employment status, race, whether or not the individual has a partner, the number of days per week the individual drinks, the number of drinks

Table 2. Summary Statistics in the Current Population Survey, ASEC, 1995-2016
Working Years

	Younger Than FRA		FRA and Older	
	Pre-Reform	Post-Reform	Pre-Reform	Post-Reform
Age	62.41 (1.36)	62.39 (1.70)	67.08 (1.39)	67.25 (1.09)
Male	0.47 (0.50)	0.48 (0.50)	0.46 (0.50)	0.47 (0.50)
Employed Full-Time	0.32 (0.47)	0.40 (0.49)	0.13 (0.34)	0.19 (0.39)
Employed Part-Time	0.12 (0.32)	0.11 (0.32)	0.11 (0.32)	0.11 (0.31)
Retired	0.40 (0.49)	0.30 (0.46)	0.66 (0.48)	0.59 (0.49)
Unemployed	0.02 (0.13)	0.03 (0.16)	0.01 (0.10)	0.01 (0.12)
Unable to Work	0.09 (0.28)	0.11 (0.31)	0.05 (0.23)	0.06 (0.25)
Other Employment Status	0.06 (0.24)	0.05 (0.22)	0.04 (0.19)	0.03 (0.17)
Black	0.09 (0.29)	0.12 (0.33)	0.11 (0.32)	0.13 (0.33)
Other Race	0.04 (0.20)	0.09 (0.28)	0.06 (0.23)	0.09 (0.28)
Hispanic	0.11 (0.31)	0.11 (0.31)	0.10 (0.30)	0.11 (0.31)
Has Partner	0.72 (0.45)	0.67 (0.47)	0.67 (0.47)	0.65 (0.48)
<i>N</i>	25, 837	108, 863	50, 330	41, 072

There are 226,102 observations. FRA stands for Full Retirement Age. FRA is 65 for the pre-reform group and 66 for the post-reform group. Standard deviations are in parenthesis. Information on education is included in the data, but not in the table. Data is from the Annual Social and Economic Supplement of the Current Population Survey (Flood et al. 2021).

per day, and feelings of depression. Table 3 displays the summary statistics. The first two columns compare the pre-reform and post-reform group at ages younger than their FRA. The last two columns compare the pre-reform and post-reform group at their FRA and older.

The two data sources provide individual-level information on employment status and other demographic variables. The HRS provides information on depres-

Table 3. Summary Statistics in the Health and Retirement Study, 1996-2018

	Younger Than FRA		FRA and Older	
	Pre-Reform	Post-Reform	Pre-Reform	Post-Reform
Age	62.41 (1.32)	62.46 (1.70)	67.06 (1.43)	67.31 (1.11)
Male	0.44 (0.50)	0.38 (0.49)	0.45 (0.50)	0.38 (0.49)
Employed Full-Time	0.35 (0.48)	0.38 (0.49)	0.14 (0.35)	0.17 (0.38)
Employed Part-Time	0.06 (0.24)	0.08 (0.26)	0.04 (0.18)	0.04 (0.19)
Retired	0.46 (0.50)	0.44 (0.50)	0.72 (0.45)	0.74 (0.44)
Unemployed	0.01 (0.12)	0.03 (0.18)	0.01 (0.10)	0.02 (0.14)
Disabled	0.03 (0.18)	0.02 (0.15)	0.01 (0.12)	0.01 (0.09)
Not In Labor Force	0.08 (0.28)	0.04 (0.20)	0.08 (0.27)	0.02 (0.16)
Black	0.15 (0.36)	0.20 (0.40)	0.13 (0.34)	0.19 (0.39)
Other Race	0.04 (0.18)	0.09 (0.28)	0.04 (0.19)	0.08 (0.27)
Hispanic	0.07 (0.26)	0.14 (0.34)	0.07 (0.26)	0.13 (0.34)
Has Partner	0.73 (0.44)	0.68 (0.46)	0.71 (0.45)	0.68 (0.47)
Number of Children	3.42 (2.11)	2.92 (1.97)	3.43 (2.17)	2.93 (1.98)
Feels Depressed	0.14 (0.35)	0.12 (0.33)	0.14 (0.34)	0.10 (0.30)
Drinking Days/Week	1.12 (2.06)	1.14 (1.92)	1.12 (2.10)	1.15 (1.95)
Drinks/Day	0.70 (1.30)	0.84 (1.43)	0.65 (1.28)	0.76 (1.26)
<i>N</i>	5,642	12,015	9,270	6,438

There are 33,365 observations. FRA stands for Full Retirement Age. FRA is 65 for the Pre-Reform group and 66 for the Post-Reform group. Standard deviations are in parenthesis. Information on education is included in the data, but not in the table. Data are from the Health and Retirement Study (Health and Study (2022); RAND (2022)).

sion and alcohol consumption. The ASEC CPS data has limitations on measurement accuracy with regards to age and year of birth, but its advantage is that it has larger sample sizes than the HRS. For this reason, I use it for analysis. Both sources have limitations on measurement accuracy with regards to employment status, but I attempt to mitigate the effect of that on the analysis. In both sources, the pre-reform and post-reform groups are mostly similar.

4. Methods

The expectation is that at age 65, the FRA increase should decrease the post-reform group's retirement rate. At age 66, the FRA increase should increase the post-reform group's retirement rate. The effects on part-time and full-time employment should be positive at age 65 and negative at age 66. At ages 67-69, there should be no effect of the FRA increase on the post-reform group's employment.

I use a difference-in-difference approach to identify the effect of the amendments on employment status, alcohol consumption, and depression. The amendments affect the post-reform group at age 66, but the members of that group turn 66 in different years depending on their year of birth. This allows me to compare the pre-reform and post-reform groups as they age. I control for year of birth to capture birth-cohort effects and then compare the pre-reform group to the post-reform group while controlling for other covariates, such as race, gender, and age. To isolate the effect of the FRA increase, I interact the birth cohort effect with age. That interactions at age 65 and 66 are the effects of the FRA increase.

The approach relies on the parallel trends assumption, which requires that, in the absence of the policy change, the difference between the two groups is the same over the sample age range. I create a graph as well as use a formal test to check if parallel trends exist.

I regress employment status, on year of birth, age, demographic variables, macroeconomic variables, and an interaction term between a binary variable indicating treatment and age dummy variables from the ages 65-69 to estimate the causal effect of the policy change on the ASEC CPS and HRS samples.

$$y_{it} = \beta_0 + \beta_1 Treat_i \times \alpha_{it}^u + \beta_2 DRC_i + \lambda x'_{it} + \gamma_i^c + \alpha_{it}^a + \epsilon_{it} \quad (1)$$

$Treat_i$ indicates if an individual is part of the post-reform group. x'_{it} is a vector of variables providing demographic information. α_{it}^a indicates age effects. γ_i^c indicates cohort effects. DRC_i indicates the individual's DRC. y_{it} represents the dependent variables. These include: retired, employed full-time, employed part-time, days per week the individual drinks, number of drinks per day, and feeling depressed. All outcomes except for days per week the individual drinks and number of drinks per day are binary variables.

The FRA policy change affects individuals at age 65, therefore I include age effects in the model. Whether or not an individual is treated depends on year of birth, so I include year of birth effects in the model. Age depends on year of sample and year of birth. For this reason, I cannot include year effects, age effects, and year of birth effects without introducing perfect collinearity to the model. I include data on the real GDP growth rate and the unemployment rate in x'_{it} to capture year effects.

The interaction of $Treat_i$ and α_{it}^a , where u indicates ages 65-69, estimates of the causal effect of the increase in FRA on the outcome variable. For example, the interaction of $Treat_i$ and age 65 or age 66 only equal one for individuals who are part of the post-reform group and when they are age 65 or 66. These interactions represent the difference between post-reform and pre-reform groups at those ages with regards to the outcome variable.

To formally test for parallel trends, I use equation (1); but also interact of $Treat_i$ with the pre-FRA ages. If parallel trends exist, then the coefficients on those interaction terms should be equal to zero.

5. Results

This section is divided into three subsections. The first contains graphs and formal tests for parallel trends in ASEC CPS and HRS data. The second contains employment status regressions with ASEC CPS data. The third contains employment status, alcohol consumption, and depression regressions with HRS data.

Parallel Trends

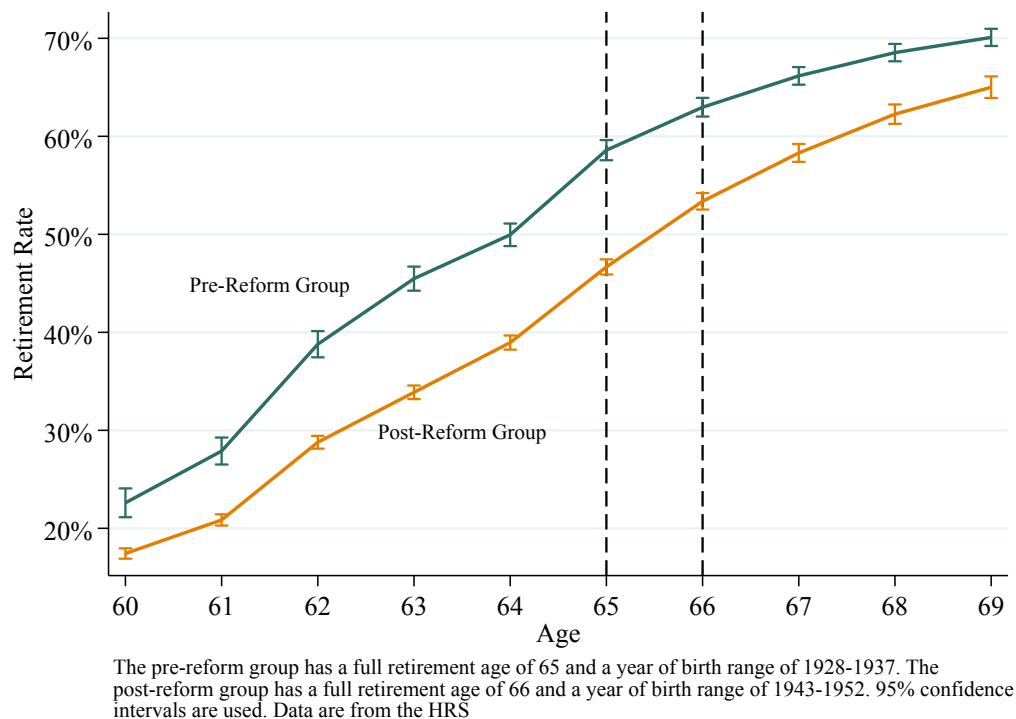
To check for parallel trends, I graph averaged retirement rates of the pre-reform and post-reform groups in each sample. Figure 1 shows the ASEC CPS graph. Figure 2 shows the HRS graph. The parallel trends test results are in Table 4.

Figure 1 displays the averaged retirement rates from ages 60-69 of the pre-reform and post-reform groups using ASEC CPS data. The two cohorts appear to move similarly, but the difference between slightly increases after age 61. The divergence might indicate that parallel trends do not exist.

Figure 2 suggests that parallel trends might exist in the HRS data. The graph contains the averaged retirement rates from ages 60-69 of the pre-reform and post-reform groups, using HRS data. The series clearly converge and intersect. Their confidence intervals overlap for all observed ages, which indicates the estimates of the two series are not significantly different from each other. This suggests that parallel trends might exist.

The parallel trends test rejects parallel trends in the ASEC CPS data, but fails to reject parallel trends in the HRS data. Table 4 displays the results of the parallel trends test regressions. Retired is the outcome variable. I estimate the regression

Figure 1. Retirement Rates of Pre-Reform and Post-Reform Groups, ASEC CPS



from equation (1), but with the additional interaction terms between post-reform and ages 60, 61, 62, and 63.

Estimates in the first column reject parallel trends in the ASEC CPS data. The post-reform and age 62/age 63 interactions are statistically insignificant, but jointly the four pre-FRA interaction terms are significant. Therefore, I reject the parallel trends assumption jointly.

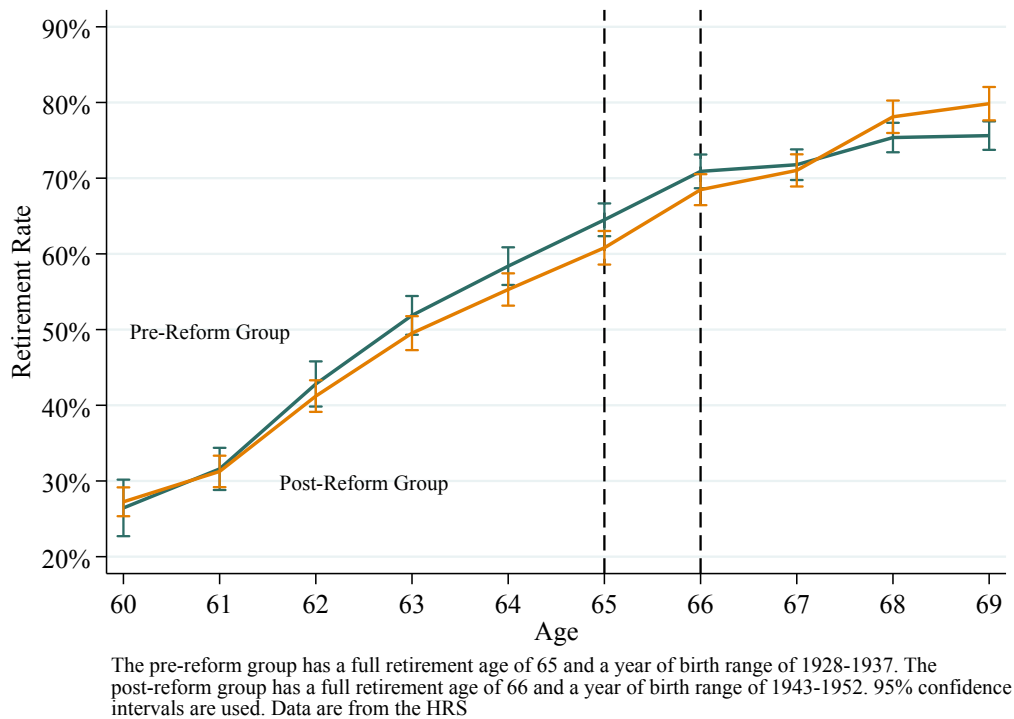
Similar estimates in the HRS data in the second column fail to reject parallel trends. The post-reform and age 60 interaction term is statistically significant, but the four interaction terms jointly are statistically insignificant. Due to this, I fail to reject the parallel trends assumption jointly.

Although the formal test rejects parallel trends in the ASEC CPS data, I still estimate the employment regressions. The periods are not far apart and there is reason to believe that controlling for year effects would allow the pre-reform group to make for a good control group in this experiment. Nevertheless, it is important to note that the formal test indicates parallel trends are absent in the ASEC CPS data.

ASEC CPS Estimates

The results of the regressions using ASEC CPS data are sensible with respect to the signs of the coefficients, although the estimates of the effect of the FRA increase

Figure 2. Retirement Rates of Pre-Reform and Post-Reform Groups, HRS



are mostly insignificant. There are two specifications for each outcome variable in Table 5. The odd columns contain a binary variable, $\text{Age} > 66$, that equals one when an individual is any age past age 66. The even columns list the ages separately.

In column (1), the post-reform group and age 65 interaction is statistically significant and indicates that being affected by the amendments and being age 65 makes someone 1.6 percentage points less likely to be retired. The effect at age 66 is not significant. As DRC increases, the retirement rate decreases. This aligns with the goals of the amendments. Being a race other than white or black decreases the retirement rate by 1.6 percentage points. Being male decreases the retirement rate by 6.3 percentage points. Having a partner makes an individual 6.2 percentage points more likely to be retired. Real GDP growth rate has no effect on being retired, but the unemployment rate age range has a negative effect.

In column (2), the estimates are all nearly the same as the estimates in column (1). The post-reform group and $\text{age} > 66$ interaction from column (1) is significant. The separate post-event ages and post-reform group interactions from column (2) are significant separately and jointly. This indicates that the policy has an effect post age 66.

In columns (3) and (4), it is clear that the increase in FRA and DRC has no effect on part-time employment. Post-Reform Group and $\text{Age} > 66$ interaction as well

Table 4. Retirement Regressions with Pre-Event Interactions

	CPS	HRS
Post-Reform \times Age 60	4.06 (1.08)	4.46 (2.24)
Post-Reform \times Age 61	2.59 (1.05)	2.14 (1.89)
Post-Reform \times Age 62	-0.31 (1.04)	2.63 (2.03)
Post-Reform \times Age 63	-1.52 (1.01)	0.71 (1.89)
Post-Reform \times Age 65	-1.00 (0.97)	-0.06 (1.76)
Post-Reform \times Age 66	1.37 (0.98)	2.41 (1.82)
Post-Reform \times Age 67	3.23 (1.00)	2.98 (1.70)
Post-Reform \times Age 68	4.90 (1.02)	7.99 (1.82)
Post-Reform \times Age 69	4.97 (1.07)	7.89 (1.70)
DRC	-2.72 (0.19)	-1.05 (0.33)
Real GDP Growth Rate	7.76 (8.18)	41.14 (31.37)
Unemployment Rate	-0.15 (0.07)	0.19 (0.17)
Constant	28.22 (1.39)	31.09 (3.28)
F	8.57	1.44
R^2	0.13	0.12
N	226, 102	33, 365

Robust standard errors are used and are reported in parenthesis. All estimates are scaled up by 100. The dependent variable in both regressions is retirement rate. Post-reform and age 64 is the reference group. F represents a joint significance test of post-reform and age 60, 61, 62, and 63 interactions. Data are from the Current Population Survey and the Health and Retirement Study.

as the separate post-event age and Post-Reform Group interactions are statistically insignificant. Being male decreases the part-time employment rate by 3 percentage points in both specifications. Real GDP growth rate has no effect on the part-time employment rate. The unemployment rate has a positive effect.

In columns (5) and (6), the increase in FRA has no effect on full-time employment at ages 65 and 66, but the effects at older ages are significant and negative.

Table 5. CPS Employment Regressions

	Retired		Employed Part-Time		Employed Full-Time	
	(1)	(2)	(3)	(4)	(5)	(6)
Post-Reform \times Age 65	-1.57 (0.76)	-1.57 (0.76)	0.05 (0.50)	0.06 (0.50)	0.40 (0.64)	0.39 (0.64)
Post-Reform \times Age 66	0.84 (0.77)	0.85 (0.77)	-0.47 (0.52)	-0.47 (0.52)	-0.39 (0.64)	-0.40 (0.64)
Post-Reform \times Age >66	3.76 (0.59)		0.15 (0.39)		-3.32 (0.50)	
Post-Reform \times Age 67		2.74 (0.80)		-0.38 (0.53)		-1.83 (0.64)
Post-Reform \times Age 68		4.38 (0.83)		0.55 (0.55)		-4.29 (0.66)
Post-Reform \times Age 69		4.45 (0.88)		0.44 (0.58)		-4.29 (0.70)
DRC	-2.57 (0.16)	-2.58 (0.16)	-0.07 (0.11)	-0.07 (0.11)	1.77 (0.13)	1.77 (0.13)
Male	-6.28 (0.21)	-6.28 (0.21)	-2.98 (0.14)	-2.98 (0.14)	10.99 (0.19)	10.99 (0.19)
Black	-0.17 (0.33)	-0.17 (0.33)	-3.44 (0.20)	-3.44 (0.20)	-2.73 (0.29)	-2.74 (0.29)
Other Race	-1.58 (0.39)	-1.58 (0.39)	-2.24 (0.25)	-2.24 (0.25)	1.40 (0.37)	1.40 (0.37)
Hispanic	-3.98 (0.34)	-3.98 (0.34)	-2.51 (0.21)	-2.51 (0.21)	1.81 (0.31)	1.81 (0.31)
Has Partner	6.17 (0.22)	6.17 (0.22)	0.76 (0.15)	0.76 (0.15)	0.09 (0.20)	0.09 (0.20)
Real GDP Growth Rate	8.03 (8.15)	7.99 (8.15)	-10.02 (5.69)	-10.04 (5.69)	13.05 (7.93)	13.10 (7.93)
Unemployment Rate	-0.18 (0.07)	-0.18 (0.07)	0.01 (0.05)	0.01 (0.05)	-0.17 (0.07)	-0.17 (0.07)
Constant	31.39 (1.23)	31.36 (1.23)	13.71 (0.84)	13.69 (0.84)	41.31 (1.02)	41.35 (1.02)
R^2	0.13	0.13	0.01	0.01	0.12	0.12
F		15.08		0.86		19.79

Robust standard errors are used and are reported in parenthesis. All estimates are scaled up by 100. F represents a joint significance test run on post-reform group and age 67, 68, and 69 interaction terms. Education, age, and year of birth effects are included in estimation, but not in the table. Data are from the Current Population Survey. There are 226,102 observations in each regression.

The DRC has a positive relationship with the full-time employment rate. Being male increases the full-time employment rate by 11 percentage points in both columns. The unemployment rate has a negative effect.

Overall, the increase in FRA has no significant effect on employment status at age 66 and only an effect on retirement at age 65. The changes to DRC do affect employment status in sensible ways. Their purpose is to increase employment and they do.

HRS Estimates

Like Table 5, Table 6 displays the estimates in the employment regressions with two specifications for each outcome variable. Table 7 displays the estimates in the alcohol consumption and depression regressions with two specifications as well. All tables in this section use HRS data.

Across all six columns in Table 6, the increase in FRA has no effect on employment status at ages 65 and 66. The increase in DRC has no effect on employment across all six columns. At ages 68 and 69, there is a positive effect of the FRA increase on retirement. Being in the post-reform group increases the retirement rate by 5.3 percentage points at age 68 and 6.6 percentage points at age 69. There is a negative effect at age 67 on part time employment. Being age 69 and part of the post-reform group decreases the likelihood of being employed part time by 2.2 percentage points.

The significant effects at ages 68 and 69 are not part of my expectations, but they might indicate a delay in the effect of the amendments on retirement. Effects of the increase in FRA on retirement at those ages are present in both data sets.

Similar to the results using the ASEC CPS data, there is no effect of the FRA increase on employment status at age 66 and there is an increase in retirement rate at older ages. Unlike the results using ASEC CPS data, there is no effect of the FRA increase on retirement at age 65, nor is there an effect of the DRC increase on employment status.

With no evidence of the effects of the amendments on employment status at ages 65 and 66, there is no clear mechanism for the amendments to affect alcohol consumption and depression at those ages. I carry out the analysis anyway and display the results in Table 7.

The amendments have no effect on the number of days per week the individual drinks and the number of drinks per day. Being male or white significantly increases the number of days per week the individual drinks and the number of drinks per day.

The effect of the FRA increase on depression is not significant at age 66. The increase in DRC has no effect on depression. There is a significant effect of the FRA increase on depression at age 65 in column (5), but not in column (6). Being part of the post-reform group and age 65 decreases the likelihood of depression

Table 6. HRS Employment Regressions

	Retired		Employed Part-Time		Employed Full-Time	
	(1)	(2)	(3)	(4)	(5)	(6)
Post-Reform \times Age 65	-0.15 (1.95)	-0.34 (2.06)	-1.46 (0.88)	-1.51 (0.95)	2.67 (1.75)	2.84 (1.87)
Post-Reform \times Age 66	-1.04 (1.89)	-0.81 (1.96)	-0.17 (0.84)	-0.12 (0.89)	1.35 (1.61)	1.12 (1.69)
Post-Reform \times Age >66	4.63 (1.38)		-1.94 (0.66)		-0.26 (1.23)	
Post-Reform \times Age 67		2.49 (2.04)		-2.16 (0.95)		2.07 (1.80)
Post-Reform \times Age 68		5.30 (2.02)		-1.79 (0.92)		-0.89 (1.73)
Post-Reform \times Age 69		6.57 (2.11)		-1.87 (0.99)		-2.50 (1.83)
DRC	-0.74 (0.62)	-0.81 (0.64)	-0.26 (0.32)	-0.28 (0.33)	0.86 (0.50)	0.93 (0.51)
Male	2.38 (0.53)	2.37 (0.53)	-4.37 (0.24)	-4.37 (0.24)	10.93 (0.48)	10.94 (0.48)
Black	2.24 (0.72)	2.23 (0.72)	-0.53 (0.35)	-0.53 (0.35)	-1.81 (0.66)	-1.81 (0.65)
Other Race	-3.77 (1.18)	-3.77 (1.18)	-0.43 (0.60)	-0.43 (0.60)	1.35 (1.07)	1.35 (1.07)
Hispanic	-9.32 (0.97)	-9.32 (0.97)	0.96 (0.51)	0.96 (0.51)	-0.68 (0.85)	-0.68 (0.85)
Has Partner	2.01 (0.60)	2.01 (0.60)	0.12 (0.30)	0.12 (0.30)	-3.81 (0.54)	-3.80 (0.54)
Real GDP Growth Rate	56.41 (32.98)	54.12 (33.01)	0.86 (16.68)	0.70 (16.68)	-44.73 (29.87)	-42.16 (29.91)
Unemployment Rate	0.10 (0.18)	0.12 (0.18)	-0.05 (0.09)	-0.05 (0.09)	-0.38 (0.17)	-0.41 (0.17)
Constant	34.88 (4.65)	35.28 (4.76)	12.35 (2.46)	12.44 (2.49)	42.03 (3.85)	41.64 (3.93)
R^2	0.12	0.12	0.02	0.02	0.11	0.11
F		5.19		2.93		2.48

Robust standard errors are used and are reported in parenthesis. All estimates are scaled up by 100. F represents a joint significance test run on post-reform group and age 67, 68, and 69 interaction terms. Education, child, household wealth, age, and year of birth effects are included in estimation, but not in the table. There are 33,365 observations in each regression. Data are from the Health and Retirement Study.

Table 7. HRS Alcohol Consumption and Depression Regressions

	Drinking Days/Week		Drinks/Day		Depressed	
	(1)	(2)	(3)	(4)	(5)	(6)
Post-Reform × Age 65	-0.043 (0.078)	-0.029 (0.082)	-0.023 (0.054)	-0.027 (0.057)	-0.027 (0.013)	-0.016 (0.014)
Post-Reform × Age 66	0.001 (0.078)	-0.013 (0.081)	0.016 (0.050)	0.019 (0.052)	-0.030 (0.013)	-0.040 (0.013)
Post-Reform × Age>66	0.007 (0.059)		-0.004 (0.037)		-0.031 (0.010)	
Post-Reform × Age 67		0.085 (0.085)		-0.004 (0.053)		-0.011 (0.014)
Post-Reform × Age 68		-0.036 (0.089)		0.006 (0.056)		-0.062 (0.014)
Post-Reform × Age 69		-0.030 (0.094)		-0.020 (0.059)		-0.008 (0.015)
DRC	0.041 (0.031)	0.045 (0.032)	0.036 (0.025)	0.035 (0.026)	-0.012 (0.006)	-0.009 (0.006)
Male	0.614 (0.023)	0.615 (0.023)	0.617 (0.017)	0.617 (0.017)	-0.030 (0.004)	-0.030 (0.004)
Black	-0.528 (0.024)	-0.528 (0.024)	-0.195 (0.019)	-0.195 (0.019)	0.029 (0.006)	0.029 (0.006)
Other Race	-0.426 (0.037)	-0.426 (0.037)	-0.148 (0.039)	-0.148 (0.039)	0.023 (0.010)	0.023 (0.010)
Hispanic	-0.240 (0.033)	-0.240 (0.033)	0.063 (0.031)	0.063 (0.031)	0.072 (0.008)	0.072 (0.008)
Has Partner	0.098 (0.024)	0.098 (0.024)	-0.071 (0.018)	-0.071 (0.018)	-0.057 (0.005)	-0.057 (0.005)
Real GDP Growth Rate	-1.122 (1.368)	-1.057 (1.370)	0.038 (0.870)	0.047 (0.870)	0.166 (0.230)	0.164 (0.230)
Unemployment Rate	0.005 (0.007)	0.004 (0.007)	0.010 (0.005)	0.010 (0.005)	-0.003 (0.001)	-0.003 (0.001)
Constant	0.457 (0.229)	0.429 (0.233)	0.415 (0.183)	0.421 (0.185)	0.250 (0.041)	0.230 (0.042)
R^2	0.09	0.09	0.07	0.07	0.06	0.06
F		0.62		0.05		6.31

Robust standard errors are used and are reported in parenthesis. F represents a joint significance test run on post-reform group and age 67, 68, and 69 interaction terms. Education, child, household wealth, age, and year of birth effects are included in estimation, but not in the table. There are 33,365 observations in each regression. Data are from the Health and Retirement Study.

by 2.7 percentage points when the specification includes post-reform and age>66 interaction term, rather than separate post-reform and age 67, 68, and 69 interactions. The post-reform group and age>66 interaction is significant. Being part of this group decreases likelihood of depression by 3.1 percentage points. When the ages are separate, the post-reform group and age 68 interaction is significant. Being part of this group decreases the likelihood of depression by 6.2 percentage points. Jointly, the three separate post-FRA interactions are significant.

Overall, the effects of the FRA increase at age 65 on employment status are ambiguous. In the ASEC CPS regressions, there is an effect of the increase in FRA on retirement at age 65. This effect is absent in the HRS regressions. There is no evidence of an effect of the FRA increase on employment status at age 66. The lack of significant effects at ages 65 and 66 in the ASEC CPS might be due to age and year of birth measurement errors, but this is not certain because the analysis with the HRS data also indicates no significant effects of the FRA increase on employment status. The effects of the DRC increase are also ambiguous. The signs of the DRC coefficients match across regressions, but significance does not. There is an effect of the FRA increase at age 68 on retired in both data sets, but why this effect exists is unclear. It might indicate a delayed effect of the FRA increase on the probability of being retired.

The analysis in Table 7 indicates that the amendments do not have an effect on alcohol consumption. The effect of the FRA increase on depression at age 65 is questionable because of the magnitude and significance change across specifications. The effect at age 68 is sensible when considering the significant effect of the FRA increase on the probability of being retired is present in both data sets. There is the question as to why either of those effects exist. This paper offers no explanation for that.

6. Summary and Conclusion

I analyze the effects of two of the Social Security Amendments of 1983, the increase of the FRA from 65 to 66 and the increase of the DRC, on employment using data from the ASEC CPS and HRS. I then analyze the effects of the amendments on alcohol consumption and depression using data from the HRS.

Since the amendments affect different birth years, identification of a control and treatment group is simple. The control group (pre-reform group) has a year of birth range of 1928-1937. The treatment group (post-reform group) has a year of birth range of 1943-1952. I isolate the effects of the amendments by controlling for birth year and age and then interacting birth cohort with age. The interactions at ages 65 and 66 estimate the causal effect of the increase in FRA.

A parallel trends test compares the pre-reform and post-reform groups' retirement rate before the FRA and determines that parallel trends are absent in the ASEC CPS data. A difference-in-difference regression estimates the effects of the

amendments on employment status in both data sets. The analysis reveals ambiguous effects of the FRA increase on the probability of being retired. The analysis of the ASEC CPS data shows a negative effect on retirement at age 65, but the analysis of the HRS data shows no effect on retirement at that age. The effects of the DRC increase are also ambiguous. There are significant effects of the DRC increase on the probability of being retired or employed full-time when analyzing the ASEC CPS data. The effects are insignificant in the HRS data.

The same model estimates the effects of the amendments on alcohol consumption and depression. There is no evidence of an effect of the amendments on alcohol consumption. I find questionable evidence of the effect of the FRA increase on depression at age 65. The significance varies across two specifications. There is evidence of an effect of the amendments on depression at age 68.

References

- Behaghel, Luc and David M. Blau. 2012. “Framing Social Security Reform: Behavioral Responses to Changes in the Full Retirement Age.” *American Economic Journal* 4: 41–67.
- Bonsang, Erik and Tobias J. Klein. 2012. “Retirement and Subjective Well-being.” *Journal of Economic Behavior and Organization* 83 (3): 311–329.
- Bureau of Economic Analysis. 2022. “Table 1.1.3. Real Gross Domestic Product, Quantity Indexes.” URL <https://apps.bea.gov/iTable/iTable.cfm?reqid=19&step=2#reqid=19&step=2&isuri=1&1921=survey>.
- Chung, Sukyung, Marisa E. Domino, and Sally C. Stearns. 2009. “The Effect of Retirement on Weight.” *Journal of Gerontology: Social Sciences* 64B: 656–665.
- Deb, Partha, William T. Gallo, Padmaja Ayyagari, Jason M. Fletcher, and Jody L. Sindelar. 2011. “The Effect of Job Loss on Overweight and Drinking.” *Journal of Health Economics* 30: 317–327.
- Deshpande, Manasi, Itzik Fadlon, and Colin Gray. 2020. “How Sticky Is Retirement Behavior in the U.S.? Responses to Changes in the Full Retirement Age.” *NBER Working Paper* (27190).
- Duggan, Mark, Irena Dushi, Sookyo Jeong, and Gina Li. 2021. “The Effect of Changes in Social Security’s Delayed Retirement Credit: Evidence From Administrative Data.” *NBER Working Paper* (28919).
- Flood, Sarah, Miriam King, Renae Rodgers, Steven Ruggles, J. Robert Warren, and Michael Westbury. 2021. “Integrated Public Use Microdata Series, Current Population Survey: Version 9.0.” Minneapolis, MN: IPUMS.

- Gustman, Alan L. and Thomas L. Steinmeier. 1985. "The 1983 Social Security Reforms and Labor Supply Adjustments of Older Individuals in the Long Run." *Journal of Labor Economics* 3 (2): 237–253.
- Health and Retirement Study. 2022. "Health and Retirement Study, (RAND HRS Longitudinal File 2018 (V2)) public use dataset."
- Hernæs, Erik, Simen Markussen, John Piggott, and Knut Røed. 2016. "Pension Reform and Labor Supply." *Journal of Public Economics* 142: 39–55.
- König, Stefanie, Magnus Lindwall, and Boo Johansson. 2019. "Involuntary and Delayed Retirement as a Possible Health Risk for Lower Educated Retirees." *Journal of Population Aging* 12: 475–489.
- Maimaris, Will, Helen Hogan, and Karen Lock. 2010. "The Impact of Working Beyond Traditional Retirement Ages on Mental Health: Implications for Public Health and Welfare Policy." *Public Health Reviews* 32 (2): 532–548.
- Mastrobuoni, Giovanni. 2009. "Labor Supply Effects of the Recent Social Security Benefit Cuts: Empirical Estimates Using Cohort Discontinuities." *Journal of Public Economics* 93 (11-12): 1224–1233.
- Pingle, Johnathan F. 2006. "Social Security's Delayed Retirement Credit and the Labor Supply of Older Men." *Board of Governors of the Federal Reserve System US Discussion Paper 2006-37* .
- RAND. 2022. "RAND HRS Longitudinal File 2018 (V2)." Produced by the RAND Center for the Study of Aging.
- Staubli, Stefan and Josef Zweimüller. 2013. "Does Raising the Early Retirement Age Increase Employment of Older Workers." *Journal of Public Economics* 108: 17–32.
- U.S. Bureau of Labor Statistics. 2022. "Unemployment Rate - 25-34 Yrs. [LNU04000089]." retrieved from FRED, Federal Reserve Bank of St. Louis. URL <https://fred.stlouisfed.org/graph/?id=LNU04000089>, #0.
- Wang, Xu, Jessica B. Steier, and William T. Gallo. 2014. "The Effect of Retirement on Alcohol Consumption: Results From the U.S. Health and Retirement Study." *European Journal of Public Health* 24 (3): 485–489.