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Explaining the Decline in the Offer Rate of Employer Retirement Plans Between 2001-2012

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Explaining the Decline in the Offer Rate of Employer Retirement Plans Between 2001-2003 and 2010-2012

Abstract

Workplace retirement plans (DC and DBs) help workers save for retirement conveniently, consistently, and automatically. But retirement account offer rates are steadily declining. Between 2001-2003 and 2010-2012, the retirement plan offer rate dropped from 63% to 55%. The drop is driven by a decline in both DB and DC plans. Using a probit model and an Oaxaca-Blinder threefold decomposition technique applied to data from the CPS for 2001-2003 and 2010-2012, and using longitudinal analysis of the SIPP 2008 panel waves 3 and 11, the authors find that the labor-contracting environment dominates individual and firm level variables among factors determining whether employers offer a retirement account to their workers. Therefore, attempts to raise retirement account offer rates must address the decline in workers' bargaining power and the changes in norms relating to benefits provision. This study contributes to the important discussion about the trends in DB and DC coverage and the decline in retirement security.

Introduction

Workplace retirement plans – either defined contribution (DC) or defined benefit (DB) plans -- provide a convenient way for employees to save for their retirement consistently and automatically. However, the share of employees working for employers who offer a retirement plan (the offer rate[1]) has been steadily declining. Between 2003 and 2012[2] the retirement plan offer rate – for either DC (401(k)-type plans) or DB plans – dropped from 63% to 55%. Surprisingly, the drop in the offer rate is driven not only by a move away from defined benefit plans, but also by a decline in DC plans. The DC plan offer rate fell from 61% in 2003 to 59% by 2012, while the DB offer rate declined from 49% in 2003 to 42% by 2012. The drop in the employer-retirement plan offer rate (for both DB and DC plans) stands in stark contrast to the doubling of offer rates between 1950 and 1979 --from 25% to 50% (Parsons 1991) -- and the offer rates' steady increase to the peak rate of 65% in 1999. This study contributes to the important discussion about the trends in DB and DC coverage, highlighting that the offer rate of *all* forms of retirement plans is eroding (see Aaronson and Coronado 2000, Hinz and Turner (1998), Even and Macpherson 1994 and 2008).

The offer rate for any kind of retirement plan through work in the U.S. declined 8 percentage points from 2003 to 2012. But changes in offer rates varied significantly by state: New Jersey's

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[1] The offer rate is sometimes called the "sponsorship" rate. Both terms refer to the proportion of workers whose employer offers a retirement plan. Note that workers who are offered a plan do not have to participate in the plan, or even be eligible to participate in the plan. They are deemed covered if the employer sponsors a plan.

[2] Because the CPS samples are relatively small at the state level, we use three year averages to make the state-level values more accurate. We refer to the end year in reporting the results; 2003 means the state average between 2001-2003, while 2012 refers to the state average between 2010-2012.

offer rate dropped by 14 percentage points while Oklahoma experienced a 2 percentage point increase. We use this considerable state variation to investigate what factors, including the state-specific labor contracting environment for employee benefits as well as firm and worker characteristics, account for changes in an employer's likelihood of offering a retirement plan to its employees. The labor contracting environment comprises measures of worker bargaining power and the effect of competitive pressures and norms on employers to offer retirement plans.

[Table 1. Retirement Offer Rates by State, 2003 and 2012 about here]

Using a probit model and an Oaxaca-Blinder threefold decomposition technique, we find that factors that affect worker bargaining power, such as the number of weeks a worker spent unemployed the previous year, part time status, and the state's unemployment rate level and trend for each age group are significant determinants of the employer retirement-plan offer rate.

Since administering retirement plans is significantly more expensive for smaller firms, we control for an individual employee's firm size and the proportion of small and tiny firms in a state.[3] Employers in a state with many smaller firms, who are less likely to offer a plan, would have relatively less pressure from competitors to provide a plan. State-specific variables serve as proxies for competitive pressures and norms on employers to offer retirement plans. We find that the state-specific fraction of workers employed in tiny firms (1-9 employees) reduced offer rates across states. This reinforces our belief that state-specific competitive pressures and norms are important predictors of the employer retirement-plan offer rate.

[3] We control for the proportion of small (10-99 employees) and tiny (1-9 employees) firms in the state.

Even and Macpherson (2008) conclude that lower retirement plan coverage rates for workers are partially attributable to higher administration costs for small firms (they used the designation 'under 25 employees') and to differences in worker characteristics by firm size. Therefore, they advocate for policies that reduce administrative costs for small firms and provide more incentives for low income workers to save. Our findings suggest that small firm incentives would likely have limited effects because workers' weakening influence on compensation and less pressure from employers' competitors to provide retirement benefits have a much larger effect on employers' willingness to offer employee retirement plans.

Employer-Retirement Plan Offer Rate Trends

Above, we report offer rate declines for the most recent years -- 2003 through 2012 -- but the downward decline is longstanding. The 1980-2012 March Supplement of the Current Population Survey (CPS) asks respondents -- who worked in the previous year -- whether their employer (or union) for their longest job during the preceding calendar year had a pension or other retirement plan for *any* of the employees, and if they did, whether the worker participated in such a plan. We construct retirement plan offer rates from this question[4] limiting the sample to wage and salary employees in the non-agricultural sector, ages 21-55, who worked at least one week the previous year.

[4] Note that while an employee may report their employer offers retirement plans for some employees, the employee may be ineligible to participate in the plan or the employee chooses not to participate. Thus, the offer rate likely overestimates the availability of employer retirement accounts.

Retirement account offer rates declined slightly between 1980 and 1985 from 60% to 57%. After 1985, offer rates increased steadily from 57% to 65% in 1999, and then fell from 1999 to 2012 from 65% to 54% -- a drop of 17% or 11 percentage points.

[Figure 1 about here]

All workers, young and old, full time and part time, public and private were less likely to work for an employer who offered a retirement plan by 2012 compared to their likelihood in 2001. The decline in retirement plan offer rates is worse for young workers (ages 21-55) but the decline is also pronounced for older workers nearer retirement age (ages 56-64). Near retirees' retirement plan offer rates fell from 67% in 2001 to 63% in 2012 (Figure 2 in the Appendix).

From 2001 to 2012 offer rates fell from 36% to 27% for those working at least one week per year; 49% to 38% for those working more than 20 weeks; and offer rates dropped from 68% to 58% for those working more than 40 weeks per year (year round workers) (Figure 3 in Appendix). Furthermore, public sector workers' offer rates fell from 86% in 2001 to 81% by 2012, while private sector workers' offer rates declined from 60% in 2001 to 49% in 2012 (Figure 4 in Appendix).

The CPS does not indicate the type of retirement account -- DB or DC -- offered. Therefore, we use the Survey of Income and Program Participation (SIPP) to assess whether the decrease in workers' access to an employer retirement plan was only driven by the well-recognized drop in DB coverage, or if there was also a decline in DC coverage. Using the SIPP we find that between 2003–2012 employers were less likely to offer retirement plan coverage of *any* type. DC coverage fell from 61% in 2003 to 59% in 2012, while DB coverage dropped from 49% in 2003 to 42% in 2012 (Figure 5 in Appendix).

Two other data sets confirm that retirement plan offer rates have been declining since 2001. The Survey of Consumer Finances (SCF) is a household level survey collected every three years from 1989-2010 and the Health and Retirement Study (HRS) is a biennial household survey of individuals ages 51 and above starting in 1992. The SCF asks respondents whether the household head or spouse participates in any type of retirement plan from a current or past job; for households whose head is between 25 and 64, employer-provided retirement account participation peaks in 1994 at 62%, and then bottoms out in 2010 at 56.6%. The HRS asks respondents who are working if their employer sponsors a retirement account or pension plan. The HRS data indicate that employer-sponsored retirement plan coverage peaked in 2000 at 59% and dropped to 53.5% by 2010.

Employer-sponsored retirement plans offer a convenient way for workers to consistently save for retirement; but, workers without an employer plan can always use Individual Retirement Accounts (IRAs). However, the vast majority of workers without an employer plan have not established an IRA. According to SIPP data, in 2011 40% of workers (ages 21-55) owned a 401(k)-type plan and 19% owned an IRA account. But only 6% of workers had an IRA account without an additional 401(k) plan indicating they established an IRA in the absence of an employer plan.[5]

Explaining the Supply and Demand of Employer Retirement Plans

Most studies identify firm and worker characteristics as factors influencing retirement plan supply and demand. Our study highlights the role of the labor-contracting environment between

[5] Authors' calculations from SIPP 2008 panel, wave10.

suppliers and demanders, in addition to firm and worker characteristics, in determining an individual's access to a retirement plan at work.

We advance Even and Macpherson's (1994, 2000, 2008) investigation of the determinants of workplace retirement plan offer rates, participation, and coverage rates. Even and Macpherson's 1994 study decomposes the change in offer rates from 1979-1988 into an explained component and an unexplained component. The explained component consists of changes in worker and firm characteristics, while the unexplained component tracks changes in the *impact* of worker and firm characteristics on the offer rate. They find that the decline in the offer rate for young male workers, ages 21-35 between 1979-1988, was 2.6 percentage points and was primarily driven by the decline in unionism -- the effect of unionism was -2.6 points; the decline in young male income explained -.06 percentage points; industry employment shifts (away from manufacturing) explained -.92 percentage points; and changes in employment across firm size explained -0.85 percentage points (other factors helped pension coverage.) Presumably, constraints on econometric techniques at the time of Even and Macpherson's 1994 study prevented them from further decomposing the unexplained component, leaving it as a looming unknown.

While Even and Macpherson's 1994 study focused on offer rates, their 2008 study looks at the retirement plan coverage rate, which is the probability of an employee being offered a retirement plan at work (the offer rate) times the probability that the worker participates in such a plan (the participation rate). They query whether the variation in coverage rates by firm size is caused by differences in the characteristics of the workers who work in small firms relative to large ones or because of elements in the unexplained component, primarily scale economies in administrative

costs. They conclude that differences are primarily due to small firms employing workers who have characteristics that militate against coverage, namely lower incomes, and partially because small firms have relatively higher administrative costs.

We use very similar methods to Even and Macpherson's 1994 study and deploy new techniques to decompose the unexplained component, revealing more factors that determine the fall in offer rates. Furthermore, using variation in state factors we go beyond differences in worker and firm characteristics and explore the role of environmental factors in determining offer rates.

We identify how changes in the labor-contracting environment affect retirement plan offer rates by utilizing the substantial variation in retirement plan offer rate trends between U.S. states. The labor-contracting environment is a combination of the relative bargaining power of employers and employees. Changes in a firm's cost constraints and the existence and impact of labor market norms on employers affect relative bargaining power. Unemployment and employer size have also long been recognized as factors affecting relative bargaining power. Peetz (2002) finds that teacher union bargaining power increases with the size of the school district. Moreover, firms are likely to pursue union avoidance strategies when they are operating in industries and regions with high import penetration and high industry unemployment (Cooke and Meyer 1990) and the level of unemployment is a key factor in explaining bargaining parties' relative strike costs (Doiron 1992).

Noting this literature, we proxy for the bargaining power of workers using unemployment rate levels and trends and weeks spent unemployed because the cost of job loss -- and the corresponding fear of job loss -- reduces workers' bargaining power. Firms also respond to norms in their labor markets in order to stay competitive. When most firms offer a retirement

benefit, there is a peer effect on nearby firms to offer the same benefits in order to attract and retain workers. We measure the influence of state labor market norms with factors that predict when other firms in the state would offer a retirement plan. These are: the fraction of the firms in the state that are small or tiny and the fraction of the state's labor force that is unionized. In sum, previous studies have focused mainly on worker and firm characteristics to explain retirement account offer or coverage rates. This study measures the impact of the bargaining environment and labor market norms, proxied by some state features and employer and employee characteristics, on the offer rate of employer-based retirement plans.

Methodology

We use the 2001-2003 and 2010-2012 March Supplement of the Current Population Survey to measure and explain the drop in employer-retirement plan offer rates over time. The sample is limited to wage and salary employees, ages 21-55, who worked at least one week the previous year in the non-agricultural sectors.[6] We use three-year averages of the data for each time period to increase the sample size at the state level, and we eliminate cases where the same individuals show up in the sample two consecutive years.[7] The 2010-2012 data references pension offer rates for the 2009-2011 calendar years and the 2001-2003 data refers to the years 2000-2002. All state-level variables are collected for years 2000-2002 and 2009-2011.

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[6] This is similar to sample restrictions used in Even and Macpherson (2008, 2000). In Even and MacPherson (2008) the sample was restricted to private sector workers age 22-55 who worked at least one week. In Even and Macpherson (2000) the sample was restricted to non-agricultural private sector wage and salary workers age 22-55 who worked at least 13 weeks.

[7] We eliminate respondents in 2002 and 2003 (2011-2012) who were in their 5-8th month in the sample.

For each of these three-year blocks of data, we apply a probit model that explains the cross sectional variation in retirement plan offer rates:

$$y_{igt} = \alpha_t X_{gt} + \gamma_t Z_{igt} + \varepsilon_{igt}$$

Where *g* indexes the state, *i* indexes the individual and *t* indexes time. Y_{igt} is an indicator of whether the individual is offered a retirement plan at work or not (0,1) , the X_{gt} are the state level variables, the Z_{igt} are the worker specific firm and personal characteristics, and ε_{igt} is the error term.

Z_{igt} include an individual's sex, age, race, citizenship, education, occupation, industry, firm size, full time/part time status, number of weeks spent unemployed, metro area residence status, whether the worker is in the private/public sector and marital status. X_{gt} consist of state level characteristics, including age specific unemployment rates, trends in age specific unemployment rates from the previous period[8], the unionization rate, and the fraction of the state's population of workers aged 21-55 who are younger than 40, have more than 2 yrs of college education or are employed in a small (10-99 employees) or tiny firms (with 9 employees or less).

Probit regressions on 2003 and 2012 data obtain estimates of α_t and γ_t for each period. The Oaxaca-Blinder threefold decomposition technique[9] separates the predicted change in employer-retirement plan offer rates between 2001-2003 and 2010-2012 into an endowment effect[10] (consisting of changes in worker, firm and state characteristics multiplied by probit coefficients

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[8] We anticipate that unemployment rates will have a different impact on bargaining power depending on whether the trend in unemployment rates is positive or negative.

[9] $X_{2012*}\square\beta_{2012} - X_{2001*}\square\beta_{2001} = X_{2001*}\square d\beta + \beta_{2001}dX + dX*d\beta\square$

[10] Also called the explained component

from the base period), a coefficient effect[11] (consisting of changes in probit coefficients across the two periods multiplied by worker, firm and state characteristics from the base period), and an interaction term (consisting of the change in probit coefficients multiplied by the change in characteristics).

This decomposition applies because in comparing two periods, 2003 and 2012, the technique measures what would have happened to offer rates if worker and firm characteristics remained as they were in 2001-2003, but the importance of those characteristics in determining offer rates changed (the coefficient effect). Similarly, the technique ascertains changes in offer rates if characteristics changed over time, but their importance in determining pension offer rates stayed as they were in 2001-2003 (the endowment effect).[12]

We apply the Yun (2005) transformation to the probit coefficients to make them invariant to the choice of omitted category variables. We then decompose the explained component, the unexplained component, and the interaction terms into the shares attributable to each variable, following the methodology in Even and Macpherson (1990) and Yun (2004). [13] This method identifies which characteristics were most influential in determining the drop in employer-retirement plan offer rates.

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[11] Also called the unexplained component.

[12] It is clear from our questions that 2001-2003 should be the base period. The threefold decomposition is the only version of Oaxaca Blinder that allows us to use 2001-2003 as the base period for both the endowment and the coefficient effects.

[13] A detailed decomposition of the coefficient and the interaction effects relies on estimated probit coefficients (betas); since the betas differ depending on the choice of omitted category, there is no unique detailed decomposition of the coefficient and the interaction effects. The Yun (2005) method transforms the coefficients making them invariant to the choice of omitted category, and therefore, it allows us to conduct a detailed decomposition of the coefficient and the interaction effects.

Because Even and Macpherson's analysis predates the Yun method, they accounted only for changes in endowments (the explained component). Applying the newest econometric advances allows us to gain a more complete picture of the determinants of employer-retirement plan offer rates over time.

Results

Between the base years 2003 and nine years afterwards, 2012, the nation's workforce grew older-- the share between 45 and 55 increased by 3 percentage points -- and better educated-- the share of workers with a college degree or better increased by 4 percentage points -- and the shares of the workforce employed in education, health care or professional services grew by 4.3 percentage points. Also, the fraction of people working in tiny (less than 10 employees) and small firms (10-99 employees), fell by 8.7 percentage points and as Even and Macpherson (2008) concluded, small firms are less likely to provide a retirement plan because they lack economies of scale in pension plan administration and their future revenue is relatively more uncertain. Despite the move toward an older, more educated, higher-income professional workforce employed in the education and health sectors in larger firms, and despite the fact that DC plans are easier to administer than DB plans, retirement plan offer rates still dropped.

Indeed, factors that detract from retirement plan access increased. Demographic groups with historically lower offer rates grew: the population is more Hispanic (their share grew by 3.2 percentage points); there are more non-citizens (up by 0.4 percentage points) and more single people (up by 4.7 percentage points). Employment in manufacturing and information services dropped by 3.1 and 2.7 percentage points, respectively – these are sectors with relatively high

offer rates. Also, more people worked part time (up by 3.1 percentage points) and the number of weeks unemployed was significantly larger in 2012 than in 2003. The unemployed were, on average, unemployed for 1.3 weeks longer in 2012 than in 2003. The unionization rate declined by 2.4 percentage points and unemployment rates for all age groups increased by 4 - 6 percentage points depending on the age group. Moreover, unemployment trends were heading up for all age groups in the latter part of the decade. All of these changes would drive retirement offer rates down.

Moreover, employer provided health insurance coverage rates fell from 75.9 percent to 68 percent – a 7.8 percentage point decrease. In other words, health insurance coverage rates through employers were correlated with retirement account trends. Since health insurance coverage rates through employers also fell over the period, we do not believe that firms were merely switching dollars toward health care coverage and away from pension provision.

[Table 2: Factors that Impact Retirement Offer Rates: Averages 2001-2003, 2010-2012 about here]

A probit analysis for each period explains variations in employer-retirement plan offer rates by individual, controlling for the characteristics of each individual and their employer, as well as characteristics of the state they live in. Marginal effects are computed at the mean values of all variables; standard errors control for clustering at the state level.

[Table 3. Marginal Effects of Retirement Plan Factors: Probit Results about here]

We find that indicators of bargaining power have statistically significant effects. The number of weeks spent unemployed decreases the offer rate in both periods; when the number of weeks

unemployed increases by 10 weeks, the offer rate decreases by 5 percentage points in 2003 and by 13 percentage points in 2012. A two percentage point increase in unemployment rate levels diminishes retirement account provision for older workers by 5.6 percentage points in 2012. Unemployment rate trends also affect the likelihood that employers offer their workers retirement accounts. A 2 percentage point increase in unemployment rate trends was associated with a 12 percentage point decrease in retirement account offer rates for middle age workers (35-44 yrs old) in 2012. If the unionization rate increases by 10 percentage points, the offer rate increases by 8.6 percentage points in 2012. Being employed in a larger firm improves one's likelihood of being covered and that advantage increased over time. In 2012, a ten percentage point increase in the share of the state's workforce employed in tiny firms decreased offer rates by 19.9 percentage points. The negative effect of being a part time worker also intensified from -15.9 to -40.2 percentage points over the time period, 2003 - 2012. The negative effects on offer rates for these bargaining power indicators – unemployment rate levels and trends, number of weeks spent unemployed, unionization, firm size, and part time status -- have intensified over time.[14]

Next, we use the marginal effects to attribute the change in employer-retirement plan offer rates between the two time periods to specific factors – worker, firm, and state characteristics. Applying the Oaxaca-Blinder threefold decomposition to the probit coefficients, we find that of the 8.8 percentage point total drop in offer rates, the endowment effect (changes in worker and

[14] Among these, F-tests could only confirm that the probit coefficients were statistically different from each other across the two time periods for the changes in unemployment trends for young and middle age workers, the state-level fraction of the workforce employed in tiny firms and individual employee firm size for workers in small (10-99 employees) and large (500 employees or more) firms.

firm characteristics and in state-level bargaining environment variables) predicts a decrease of 1.9 percentage points, while the coefficient effect (changes in the *role* of the endowments in determining offer rates) predicts a decrease of 2.9 percentage points. Moreover, the *interaction* between changes in endowments and the change in their role predicts a 4.0 percentage point decrease in offer rates. Although none of these effects is statistically significant, a detailed decomposition finds many of effects *are* statistically significant (See Appendix Table 1).

[Table 4. Endowment, Coefficient and Interaction Effects of Bargaining Power and Individual and Firm Characteristics about here]

A summary of the statistically significant detailed decomposition results is displayed in Table 5. (The comprehensive decomposition results are in Appendix Table 1.) Again, bargaining power measures dominate other factors. The increase in unemployment rate levels decreases offer rates by 3.4 percentage points. Upward trends in unemployment rates differed by age group, but their total impact was to diminish predicted offer rates down by 2.6 percentage points. The increase in number of weeks spent unemployed, which is predominantly an endowment effect, caused offer rates to fall by 0.7 percentage points. The combined impact of other indicators of bargaining power -- being non-white, not having a married partner, and working part time -- lowered predicted offer rates by 0.9 percentage points. Some states' workforces got younger --this is correlated with many economic factors, such as immigration and economic growth--which boosted offer rates by 57.7 percentage points. Changes in the fraction of people in a state working for tiny firms decreased offer rates by 10.7 percentage points. In contrast, changes in the individual's firm size (mostly due to more people working for smaller firms) brought about a decrease in offer rates by only 1.1 percentage points. Because Even and Macpherson's analysis only focused on the effect of an individual worker's firm size, without taking into account the

impact of the fraction of small firms in a state on labor market norms and bargaining power, their analysis using the same data, would have only identified the much smaller, 1.1 percentage point, decrease in offer rates. The comparison between our results and those of Even and Macpherson highlights the importance of using the most up-to-date methodology and including state level norms and bargaining power factors to understand how retirement plan offer rates are determined.

[Table 5: The Effects of All Factors: Detailed Results of Decomposition about here]

Robustness Checks for Changes in Time Period; Correlation of Error Terms across States; and Under-Specification Due to Using a Cross Section.

Our findings are robust to a shift in the underlying time period to 2000-2002 and 2008-2010. Analysis of the data from the shifted time period produces endowment, coefficient and interaction effects similar to our baseline results (See Table 6).

[Table 6. Decomposition results for 2000-2002 and 2009-2011 about here]

We corrected for the likelihood that the standard errors of the state level probit coefficients are biased downward -- making the probit coefficients appear to be significant when in reality they may not be -- by calculating Huber-White Standard Errors; this adjusts for correlation of the

error terms within states.[15] This bias can occur since each state-level variable uses the same information for all observations in the state, as opposed to other variables that vary for each individual in the state.

However, as discussed in Wooldridge (2003), this standard method for correcting for clustering is not sufficient when the number of groups is finite. In our case, we have 51 states (including the District of Columbia) – definitely a finite number. Each of the states in our sample contains anywhere from 800 to 2000 observations. The size of the potential bias to standard errors from clustering is the square root of (1+ (n-1)ρ) where n is the number of observations per group, and ρ is the within correlation of the error term in each group. Because of the high number of observations per group in our sample, the potential bias could be severe.

To correct for this, we use a method from Wooldridge (2006) in which probit equations are run separately for each state, substituting state level variables with a state level dummy (which is the intercept term of the equation) and constraining the impacts of all categorical variables to sum to one.

$$y_{igt} = D_{gt} + \gamma_t Z_{igt} + \varepsilon_{igt}$$

The estimated $\widehat{D}_{gt}$ from these equations includes all the state level variables.

$$\widehat{D}_{gt} = 1 + \alpha_t X_{gt} + \mu_{gt}$$

We then regress the 47[16] estimated state level intercepts on the state level variables using Weighted Least Squares, where the weights are the inverse of the estimated standard errors of the

[15] Note that the clustering does not impact the consistency of the probit estimates. Assuming the model is correctly specified, the probit coefficients are accurate, and therefore the decomposition exercise is unaffected.

$\widehat{D}_{gt}$ terms in the first stage.[17] When the sample size falls to 47, statistically significant results are unlikely. Yet in 2003, the share of the state's workforce who is under 40 years of age and who works in small firms had a statistically significant negative impact on offer rates (see Appendix Table 2). In 2012 none of the effects are statistically significant. However, in the state-specific first stage regressions the number of weeks unemployed had a statistically significant negative effect on offer rates. We augment our robustness checks using different data, as shown below.

Robustness Checks Using Longitudinal Data: SIPP

Our findings rely on cross sectional data from 2003 and 2012. While the results are significant, there is always a possibility that an omitted dimension explains the change in offer rates. To correct for this possibility, we use longitudinal data from the SIPP 2008 panel. Waves 3 and 11 were fielded in April-July 2009 and December 2011-March 2012, and in both of these waves, respondents were asked about their retirement account offer rates. Though it is a short panel, we track respondents who were ages 21-55, were working and were sponsored for a retirement account through their employer in wave 3, who remained in the sample and were working in wave 11. We investigated what happened to these respondents: did they retain their access to a retirement plan at work or did they lose it? A probit analysis of the probability of losing access to a retirement plan at work -- subject to individual level and state level controls -- shows that only obtaining education past the college level helps workers gain access to coverage. Workers were

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[16] Florida, New Jersey, Rhode Island and District of Columbia were dropped because the first stage probit regressions did not converge.

[17] The results from this method are not fully comparable to the probit coefficients we estimated originally, because the model we used constrained the intercept term to be the same across states, whereas in the current exercise, each state has its own intercept term.

likely to lose coverage when they moved to a smaller firm, changed to certain industries or occupations, became self-employed, or if they became single. The number of months spent unemployed significantly reduced a person's likelihood of having a retirement account at work at their next job. On the other hand, gaining union coverage significantly improved one's likelihood of the new employer offering a retirement account, as did working more hours (see Table 7)

[Table 7. Probit regression results using longitudinal data from the 2008 panel of the SIPP waves 3 and 11.]

For the most part, in the SIPP analysis the only state condition that affected the chance someone would lose coverage when switching jobs was the fraction of the state's population employed in small firms. The lack of significance of other state level variables in the longitudinal analysis may be a result of the short panel length, which does not allow for many changes at the state level.

The results of the longitudinal analysis reinforce our claim that bargaining power matters, since the length of time spent unemployed and union status both significantly impacted the likelihood of losing or retaining retirement account offer rates.

Conclusion

State variation in retirement account offer rates helps reveal how the labor contracting environment, along with firm and worker characteristics, account for changes in offer rates over time.

Using a probit model and an Oaxaca-Blinder threefold decomposition technique with the CPS for 2003 and 2012, we find that bargaining power variables dominate individual and firm level variables in determining retirement account offer rates. Specifically, the state-level fraction of workers employed in tiny firms, the increase in part time status, the increase in unemployment rate levels and trends, and increases in the number of weeks spent unemployed all decreased offer rates. The impacts of the above bargaining power variables were more important than other individual and firm level characteristics, such as race, sex, marital status, occupation and workers level of education.

Longitudinal analysis using the SIPP 2008 panel, waves 3 and 11 reinforces our claim that bargaining power matters, since the share of the state's workforce in small firms, length of time spent unemployed, and union status significantly impact the likelihood of losing or retaining employer-retirement plan coverage.

Our results suggest that the labor contracting environment, and specifically, the relative bargaining power of employers and employees, as well as the impact of labor market norms on employers are significant determinants of retirement account offer rates. Therefore, attempts to raise retirement account offer rates must address the degradation of workers' bargaining power and the changes in norms relating to benefits provision.

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Table 1. Retirement Offer Rates by State, 2003 and 2012			
	2003	2012	% point difference
US	63%	55%	-8%
	Top 10		
New Jersey	62%	49%	-14%
Utah	67%	54%	-14%
Michigan	69%	57%	-12%
Georgia	63%	51%	-12%
Tennessee	66%	54%	-12%
Arizona	60%	48%	-12%
Hawaii	67%	56%	-11%
Mississippi	63%	52%	-11%
Texas	59%	48%	-11%
Louisiana	62%	50%	-11%
	Bottom 10		
Kansas	69%	65%	-4%
South Dakota	68%	64%	-4%
District	66%	63%	-3%
Vermont	65%	62%	-3%
Colorado	61%	58%	-2%
Wyoming	65%	63%	-2%
Montana	59%	60%	1%
West Virginia	59%	61%	2%
Washington	63%	65%	2%
Oklahoma	60%	62%	2%

Data: Current Population Survey, March Supplement, 2001-2003 and 2010-2012.
Notes: Table is ranked by the percentage point change in retirement plan offer rates. Data on offer rates refers to the respondent's longest held job in the previous calendar year. Sample is limited to Wage and salary workers in the non-agricultural sectors age 21-55, working at least 1wk/yr. Only states with the ten largest and smallest percentage point difference change in offer rates are shown.

Table 2. Factors that Impact Retirement Offer Rates: Averages 2003, 2012				
Variable	2003	2012	Difference	
Offer rate	63.0%	54.8%	-8.2%	***
Age				
Age 21-34	39.9%	40.8%	0.9%	***
Age 35-44	31.6%	27.6%	-3.9%	***
Age 45-55	28.6%	31.6%	3.0%	***
Race				
White non-Hispanic	69.9%	66.7%	-3.2%	***
Black Non-Hispanic	12.4%	11.8%	-0.6%	***
Asian Non-Hispanic	4.8%	5.4%	0.6%	***
Hispanic	12.9%	16.1%	3.2%	***
Citizenship status				
Noncitizen	9.2%	9.6%	0.4%	***
Education				
Less than HS education	9.8%	8.2%	-1.7%	***
HS or some college	51.1%	47.6%	-3.5%	***
Associates' degree	9.6%	10.8%	1.2%	***
Bachelors' degree	20.5%	22.8%	2.3%	***
Masters, professional degree or Doctorate	9.0%	10.6%	1.7%	***
Occupation				
Professional and technical occupations	23.9%	26.3%	2.4%	***
Managers, officials, proprietors	14.0%	12.0%	-2.1%	***
Operatives	10.9%	9.6%	-1.4%	***
Service workers	13.4%	15.7%	2.3%	***
Industry				
Manufacturing	14.4%	11.3%	-3.1%	***
Wholesale trade	3.9%	2.7%	-1.2%	***
Information	5.1%	2.5%	-2.7%	***
Professional services	4.2%	6.1%	1.9%	***
Education	9.1%	9.9%	0.8%	***
Health care and social assistance	12.3%	13.8%	1.6%	***
Accommodation and food	6.1%	7.2%	1.1%	***
Firm size				
1-9 employees	23.6%	25.2%	1.7%	***
10-99 employees	18.9%	26.0%	7.0%	***
100-499 employees	27.5%	13.3%	-14.2%	***
500+ employees	30.0%	35.5%	5.5%	***

Table 2 (continued)				
Marital status				
Married	58.8%	54.9%	-4.0%	***
Never married	26.6%	31.4%	4.7%	***
Other employee characteristics				
Metro Area	83.3%	85.5%	2.2%	***
Public sector	16.4%	16.5%	0.2%	
Part-time	13.3%	16.4%	3.1%	***
Number of Weeks Unemployed	1.4	2.7	1.3	***
Health Insurance coverage through the employer	75.9%	68.0%	-7.8%	***
State level variables affecting bargaining power				
State Unionization rate	16.2%	13.8%	-2.4%	***
The share of workers age 21-55 with two years of college education or more in the state	38.8%	43.2%	4.5%	***
the percentage of employees working in tiny firms (9 employees or less) in the state	18.6%	19.2%	0.7%	***
the percentage of employees working in small firms (10-99 employees) in the state	22.2%	22.1%	-0.1%	
the percent of the population age 21-55 who is under 40 years of age in the state	54.5%	52.8%	-1.7%	***
Unemployment rate for age group 21-34	6.1%	11.9%	5.8%	***
Unemployment rate for age group 35-44	4.1%	8.6%	4.5%	***
Unemployment rate for age group 45-55	3.1%	7.2%	4.1%	***
Trend in Unemployment rate for age group 21-34	0.8%	1.6%	0.8%	***
Trend in Unemployment rate for age group 35-44	0.6%	1.3%	0.7%	***
Trend in Unemployment rate for age group 45-55	0.5%	1.1%	0.6%	***
Data: Current Population Survey, March Supplement, 2001-2003 and 2010-2012. Sample restricted to wage and salary workers in the non-agricultural sectors, ages 21-55, working at least 1 wk/yr. *Notes*:*** denotes significance at the 1% level or better, ** denotes significance at the 5% level or better, and * denotes significance at the 10% level or better. Only subsets of occupations and industries shown for space saving reasons.				

Table 3. Regression of retirement plan offer rates on employee, firm, and state characteristics

	2003				2012			
Offer Rate	Probit Marginal effects	Std. Err.	OLS Coef	Std. Err.	Probit Marginal effects	Std. Err.	OLS Coef	Std. Err.
Female	-3.4%	0.6%	-2.9%	0.01%	-9.3%	1.2%	-3.0%	0.0%
Age (omitted category is age 21-34)								
Age 35-44	4.8%	0.4%	4.0%	0.01%	11.8%	1.9%	3.8%	0.0%
Age 45-55	5.5%	0.6%	4.7%	0.01%	17.0%	2.3%	5.6%	0.0%
Race (omitted category is White Non-Hispanic)								
Black Non-Hispanic	-5.6%	1.0%	-5.0%	0.01%	-13.9%	3.9%	-5.0%	0.0%
Asian Non-Hispanic	-6.9%	1.4%	-6.1%	0.02%	-14.8%	2.6%	-5.8%	0.0%
Hispanic	-10.1%	1.0%	-7.9%	0.02%	-28.3%	4.2%	-8.3%	0.0%
Citizenship status (omitted category is non-citizens)								
Citizen	14.6%	1.3%	10.2%	0.02%	36.3%	2.3%	8.2%	0.0%
Education (omitted category is high school dropouts)								
HS or some college	11.9%	0.8%	8.5%	0.01%	25.1%	2.5%	5.7%	0.0%
Associates' degree	16.9%	1.1%	12.8%	0.02%	39.7%	3.1%	10.4%	0.0%
Bachelors' degree	19.5%	1.0%	14.9%	0.02%	41.5%	4.1%	11.1%	0.0%
Masters, professional degree or Doctorate	24.0%	1.6%	18.0%	0.02%	57.7%	4.9%	16.7%	0.0%
Occupation (omitted category is professional and technical occupations)								
Managers, officials, proprietors	0.6%	1.0%	0.3%	0.02%	5.0%	2.3%	1.5%	0.0%
Clerical and kindred	-2.6%	0.9%	-2.7%	0.02%	2.8%	2.2%	0.0%	0.0%
Sales workers	-3.9%	1.2%	-3.6%	0.02%	-17.6%	2.0%	-6.3%	0.0%
Craftsmen	-2.1%	0.9%	-2.5%	0.02%	-0.4%	2.8%	-1.2%	0.0%
Operatives	-7.1%	1.0%	-7.1%	0.02%	-15.7%	2.2%	-6.6%	0.0%
Service workers	-13.2%	0.8%	-10.0%	0.02%	-22.6%	3.6%	-6.6%	0.0%
Farm laborers	-14.3%	8.6%	-12.3%	0.14%	-62.7%	33.1%	-18.7%	0.2%
Laborers	-11.7%	1.2%	-9.9%	0.02%	-21.2%	3.8%	-6.7%	0.0%
Industry (omitted category is mining)								
Utilities	11.8%	3.7%	8.6%	0.08%	19.9%	11.0%	6.7%	0.1%
Construction	-9.1%	2.0%	-8.3%	0.07%	-18.1%	10.2%	-6.8%	0.1%
Manufacturing	-1.4%	2.5%	-1.3%	0.07%	-3.2%	9.3%	-1.2%	0.1%
Wholesale trade	0.1%	2.8%	-0.1%	0.07%	0.1%	9.6%	-0.5%	0.1%
Retail trade	-13.3%	2.7%	-12.0%	0.07%	-26.7%	9.1%	-9.8%	0.1%
Transport and warehousing	-14.8%	3.1%	-13.1%	0.07%	-28.6%	9.3%	-10.3%	0.1%
Information services	-5.6%	2.4%	-4.9%	0.07%	-12.3%	10.1%	-4.3%	0.1%

Table 3 (continued)								
Finance and insurance	5.0%	2.9%	4.4%	0.07%	14.1%	9.3%	5.3%	0.1%
Real estate	-16.5%	2.8%	-15.1%	0.07%	-25.9%	8.9%	-10.0%	0.1%
Professional services	1.9%	2.7%	1.5%	0.07%	3.6%	8.4%	0.9%	0.1%
Administration and waste management	-14.6%	2.5%	-12.7%	0.07%	-38.1%	10.6%	-12.1%	0.1%
Education	-5.1%	2.7%	-5.5%	0.07%	-9.1%	9.6%	-3.9%	0.1%
Health care and social assistance	-3.6%	2.5%	-4.1%	0.07%	-9.6%	9.4%	-4.6%	0.1%
Arts and entertainment	-13.2%	3.3%	-12.7%	0.07%	-35.2%	10.2%	-13.6%	0.1%
Accommodation and food	-25.6%	2.9%	-20.6%	0.07%	-64.4%	9.5%	-18.4%	0.1%
Other services	-14.8%	2.6%	-11.9%	0.07%	-32.3%	9.2%	-10.5%	0.1%
Public administration	-1.7%	3.1%	-0.7%	0.08%	16.5%	10.1%	4.6%	0.1%
Firm size (omitted category is 1-9 employees)								
Firm size 10-99	13.7%	1.0%	10.5%	0.01%	42.4%	2.0%	11.4%	0.0%
Firm size 100-499	29.5%	0.7%	24.3%	0.01%	72.6%	2.5%	21.6%	0.0%
Firm size 500+	40.5%	0.9%	33.9%	0.01%	90.6%	1.8%	28.2%	0.0%
Marital status (omitted category is married)								
Separated, Divorced, Widowed	-3.8%	1.0%	-3.0%	0.01%	-12.7%	1.9%	-4.1%	0.0%
Never Married	-7.3%	0.8%	-5.9%	0.01%	-19.8%	1.8%	-6.1%	0.0%
Other employee characteristics								
Metro Area	-1.2%	0.9%	-1.0%	0.01%	-5.1%	3.3%	-1.7%	0.0%
Public Sector	24.7%	1.1%	18.0%	0.02%	64.3%	3.6%	21.4%	0.0%
Part-time	-15.9%	0.8%	-12.2%	0.01%	-40.2%	1.5%	-10.9%	0.0%
Number of Weeks Unemployed[3]	-5.4%	0.4%	-3.9%	0.0%	-13.0%	1.0%	-3.5%	0.0%
State level variables affecting bargaining power								
The percentage of workers younger than 40 in the state [1]	-10.8%	2.6%	-8.5%	0.02%	3.8%	9.5%	1.1%	0.0%
The percentage of workers with 2 yrs of college or more in the state [1]	0.0%	1.5%	-0.1%	0.01%	3.0%	3.9%	0.9%	0.0%

Table 3 (continued)								
The percentage of employees working in tiny firms (1-9 employees) [1]	-1.2%	3.2%	-1.1%	0.03%	-19.9%	9.7%	-6.3%	0.0%
The percentage of employees working in small firms (10-99 employees) [1]	-2.0%	3.9%	-1.6%	0.04%	-6.6%	15.7%	-1.6%	0.0%
Unemployment rate for age group 21-34 [2]	-1.6%	0.9%	-1.2%	0.01%	-1.5%	2.2%	-0.4%	0.0%
Unemployment rate for age group 35-44 [2]	0.2%	1.7%	0.2%	0.01%	4.2%	2.8%	1.3%	0.0%
Unemployment rate for age group 45-55 [2]	0.4%	2.6%	0.1%	0.02%	-5.6%	2.7%	-1.8%	0.0%
Trend in unemployment rate for age group 21-34 [2]	5.2%	2.4%	4.3%	0.02%	-0.1%	5.3%	-0.1%	0.0%
Trend in unemployment rate for age group 35-44 [2]	3.3%	2.2%	2.5%	0.02%	-12.0%	4.9%	-3.9%	0.0%
Trend in unemployment rate for age group 45-55 [2]	-1.5%	2.5%	-1.2%	0.02%	6.4%	7.1%	2.1%	0.0%
State Unionization rate [1]	1.9%	1.2%	1.6%	0.01%	8.6%	4.9%	2.6%	0.0%
Intercept			76.5%	0.16%			30.7%	0.2%
R-Squared	20.1%		24.4%		20.1%		23.4%	
Observations	82893				69165			

Data: Current Population Survey, March supplement, 2001-2003 and 2010-2012. Sample restricted to wage and salary workers in the non-agricultural sectors, ages 21-55, working at least 1 wk/yr. Probit marginal effects were calculated at mean values of all variables.

1. Refers to a 10 percentage point increase
2. Refers to a 2 percentage point increase
3. Refers to an increase of 10 weeks in the number of weeks spent unemployed

Table 4. Endowment, Coefficient and Interaction Effects

	Total	Endowments	Coefficients	Interaction
Total Predicted Change	-8.8%	-1.9%	-2.9%	-4.0%
Standard Errors of Total Predicted Change	0.7%	3.8%	2.8%	4.4%

Data: Current Population Survey, March Supplement, 2001-2003 and 2010-2012. Sample restricted to wage and salary workers in the non-agricultural sectors, ages 21-55, working at least 1 wk/yr. Oaxaca-Blinder decomposition results are based on the probit coefficients in Table 3. Results using OLS coefficients are almost identical.

Table 5. Summary of detailed decomposition results

	Endowments	Coefficients	Interaction	Total
Intercept	0.0%	-54.1%	0.0%	-54.1%
The percentage of employees working in tiny firms (9 employees or less) in the state	0.0%	-10.7%	0.0%	-10.7%
Unemployment levels	-3.4%	0.0%	0.0%	-3.4%
Unemployment trends	1.5%	-1.9%	-2.2%	-2.6%
Individual employee firm size	-0.7%	-0.4%	0.0%	-1.1%
Number of weeks spent unemployed	-0.7%	0.0%	0.0%	-0.7%
Full/Part time status	-0.4%	0.0%	0.0%	-0.4%
Race	-0.3%	0.0%	0.0%	-0.3%
Marital status	-0.2%	0.0%	0.0%	-0.2%
Age	0.0%	0.0%	0.0%	0.0%
Industry	-0.2%	0.2%	0.0%	0.0%
Individual employee's education	0.4%	-0.2%	0.0%	0.1%
Occupation	-0.2%	1.0%	0.1%	0.9%
The percentage of workers younger than 40 in the state	1.3%	57.8%	-1.5%	57.7%

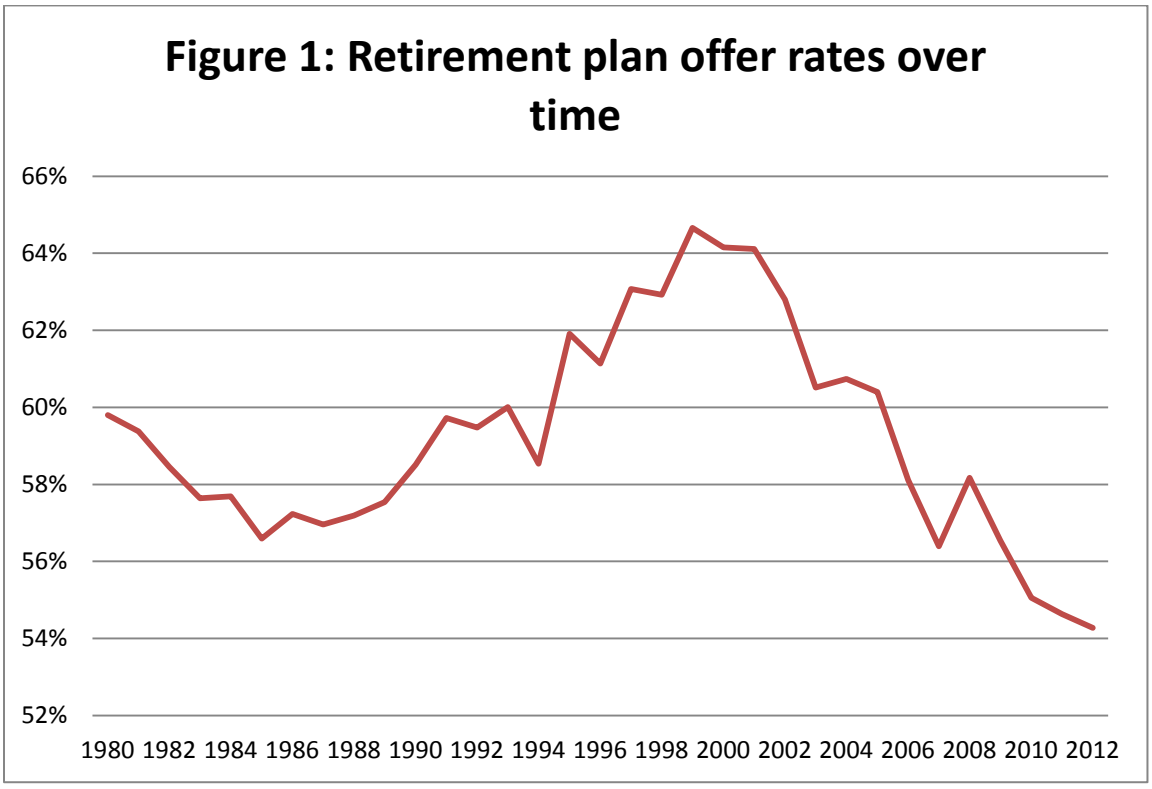
Data: current population survey, march supplement, 2001-2003 and 2010-2012. Sample restricted to wage and salary workers in the non-agricultural sectors, ages 21-55, working at least 1 wk/yr. Only statistically significant effects were included in the summary measures above. Excluded variables were gender, younger age status, citizenship, some race categories, subsets of occupation and industry, metropolitan area status, public sector employment, fraction of the workforce with a college degree or better, fraction of the workforce in firms with 10-99 employees, unemployment levels of middle age and older groups, unemployment trends for older workers, and the state unionization rate.

Table 6. Endowment, Coefficient and Interaction Effects: robustness check				
	Total	Endowments	Coefficients	Interaction
Total Predicted Change	-8.2%	-3.7%	-1.2%	-3.3%
Standard Errors of Total Predicted Change	0.7%	4.0%	2.6%	4.5%
Data: Current Population Survey, March Supplement, 2000-2002 and 2009-2011. Sample restricted to wage and salary workers in the non-agricultural sectors, ages 21-55, working at least 1 wk/yr.				

Table 7. Probit regression results using longitudinal data from the SIPP 2008 panel waves 3 and 11			
Offer rate status for those who were sponsored for a retirement account through their employer in April-July 2009, by December 2011-March 2012	Coef.	Std. Error	
Changed education: No change in education (omitted category)			
HS degree and some college (no degree)	63.7%	25.1%	***
Professional Degree	-51.2%	25.4%	**
Changed occupation: No change in occupation (omitted category)			
Education, Training, and Library Occupations	44.0%	26.1%	*
Food Preparation and Serving Related Occupations	98.8%	29.3%	***
Building and Grounds Cleaning and Maintenance Occupations	52.3%	21.0%	***
Personal Care and Service Occupations	45.6%	19.0%	**
Sales and Related Occupations	34.7%	14.8%	**
Production Occupations	48.9%	20.4%	**
Changed industry: No change in industry (omitted)			
Transport, Warehousing, Utilities	50.8%	21.0%	**
Professional, scientific, management, administration, waste management	48.7%	14.2%	***
Arts, entertainment, recreation, accommodation, food services	52.8%	25.7%	**
Other services, except public administration	63.8%	27.6%	**
Changed firm size: No change in firm size (omitted)			
Firm size decreased	83.3%	6.6%	***
Firm size increased	29.0%	7.8%	***
Changed classification: No change in classification of worker (omitted)			
Self Employed	136.7%	17.1%	***
Number of months spent unemployed since April-July 2009	2.8%	0.7%	***
Changed union coverage: No change in union coverage (omitted)			
Gained union coverage	-28.1%	13.8%	**
Changed marital status: No change in marital status (omitted)			
Single	80.7%	33.5%	***
Change in hours	-0.5%	0.3%	*
Changes in State level variables			
The percentage of employees working in small firms (10-99 employees) in the state [1]	-10.1%	3.8%	*
Intercept term	-211.9%	22.8%	***
Observations	8440		

R-Squared	12%		

Results are for a probit regression, where the dependent variable is Dependent variable: 0- if the respondent was sponsored and continues to be sponsored, 1- if the respondent was sponsored but lost sponsorship. Standard errors are adjusted for clustering at the state level. Data are for respondents in the SIPP 2008 panel who were ages 21-55 and employed in wave 3 and who remained in the sample through wave 11 and were employed in wave 11. *** denotes significance at the 1% level or better, ** denotes significance at the 5% level or better, * denotes significance at the 10% level or better. Only significant coefficients are shown. The variables that had an insignificant effect are subsets of the education, occupation, industry, marital status and worker classification categories, changes in part time/full time status, changes in the state fraction of the workforce with a college degree or better, changes in the state fraction of the workforce in tiny firms, changes in the fraction of the state's workforce that is younger than 40, changes in unemployment levels and trends, and changes in the state unionization rate. [1]Refers to a 10 percentage point change.



Source: CPS March Supplement data. Sample restricted to wage and salary workers in the non-agricultural sectors, ages 21-55, working at least 1 wk/yr. Authors' calculations.

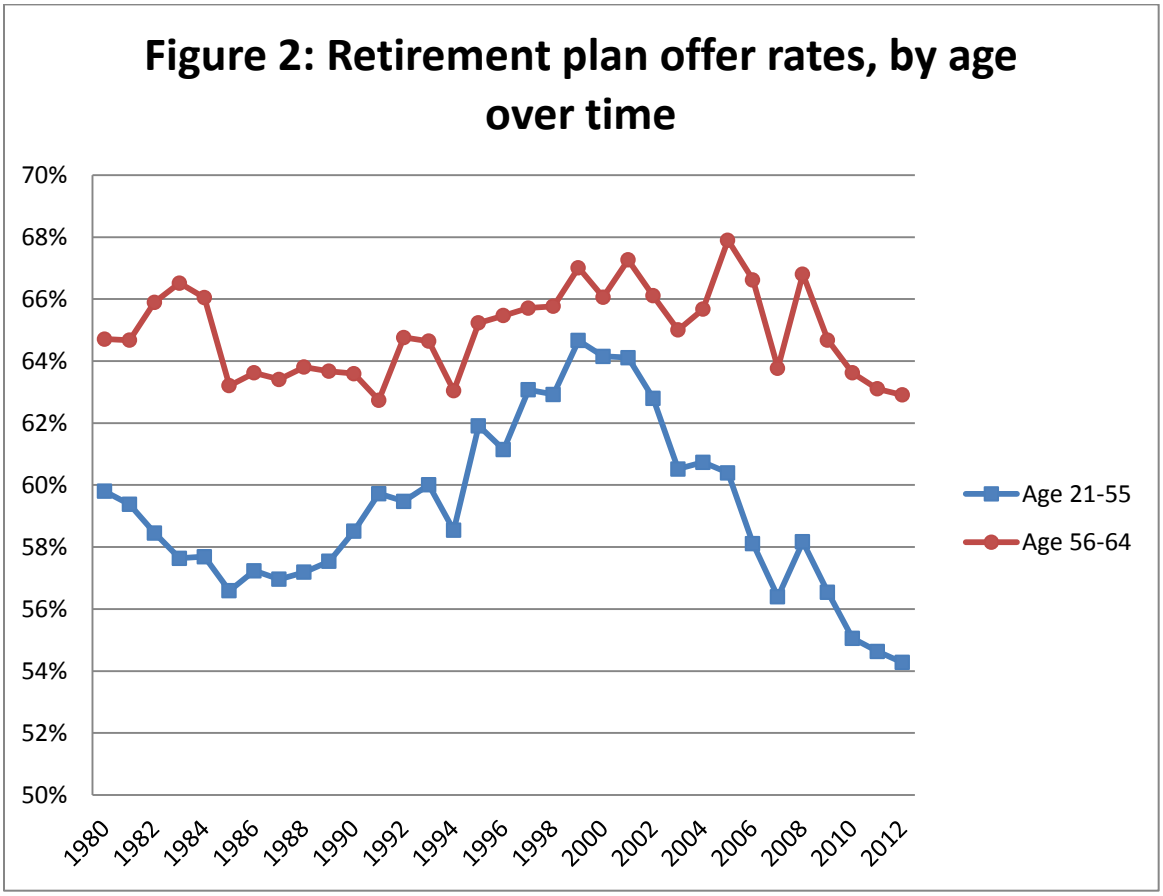
Appendix table 1. Detailed decomposition results						
	Endowments		Coefficients		Interaction	
	Effect	s.e.	Effect	s.e.	Effect	s.e.
Gender						
Male	0.01%	0.00%	0.06%	0.14%	0.00%	0.00%
Female	0.01%	0.00%	-0.05%	0.13%	0.00%	0.00%
Age						
Age 21-34	0.00%	0.01%	-0.14%	0.21%	0.00%	0.00%
Age 35-44	-0.04%	0.01%	-0.14%	0.13%	0.01%	0.01%
Age 45-55	0.06%	0.01%	0.21%	0.14%	0.03%	0.02%
Race						
White Non-Hispanic	-0.16%	0.03%	0.00%	0.50%	0.00%	0.02%
Black Non-Hispanic	0.00%	0.00%	0.01%	0.12%	0.00%	0.00%
Asian Non-Hispanic	0.00%	0.00%	0.04%	0.05%	0.00%	0.00%
Hispanic	-0.13%	0.03%	-0.15%	0.13%	-0.03%	0.03%
Citizenship status						
Non-Citizen	-0.04%	0.03%	0.01%	0.07%	0.00%	0.00%
Citizen	-0.04%	0.03%	-0.06%	0.50%	0.00%	0.00%
Education						
HS Dropout	0.19%	0.04%	0.16%	0.12%	-0.02%	0.01%
HS or some college	0.05%	0.01%	-0.22%	0.35%	0.01%	0.02%
Associates' degree	0.02%	0.01%	0.03%	0.08%	0.00%	0.01%
Bachelors' degree	0.08%	0.01%	-0.25%	0.13%	-0.03%	0.01%
Masters, professional degree or Doctorate	0.07%	0.02%	0.02%	0.06%	0.00%	0.01%
Occupation						
Professional and technical	0.08%	0.02%	-0.03%	0.31%	0.00%	0.02%
Managers, officials, proprietors	-0.12%	0.03%	0.14%	0.27%	-0.02%	0.04%
Clerical and kindred	0.02%	0.01%	0.47%	0.26%	0.02%	0.01%
Sales workers	-0.01%	0.01%	-0.17%	0.12%	0.02%	0.01%
Craftsmen	-0.02%	0.01%	0.20%	0.29%	-0.01%	0.01%
Operatives	0.01%	0.01%	0.07%	0.21%	-0.01%	0.02%
Service workers	-0.14%	0.03%	0.52%	0.31%	0.08%	0.05%
Farm laborers	0.00%	0.00%	-0.01%	0.01%	0.00%	0.01%
Laborers	0.01%	0.01%	0.15%	0.13%	0.00%	0.01%
Industry						
Mining	0.01%	0.00%	0.00%	0.02%	0.00%	0.00%
Utilities	-0.01%	0.01%	-0.03%	0.03%	0.00%	0.00%
Construction	0.00%	0.00%	0.07%	0.07%	0.00%	0.00%

Appendix table 1. (continued)						
Manufacturing	-0.08%	0.03%	-0.12%	0.12%	0.02%	0.02%
Wholesale trade	-0.07%	0.02%	-0.05%	0.07%	0.01%	0.02%
Retail trade	0.02%	0.01%	0.12%	0.10%	-0.01%	0.01%
Transport and warehousing	-0.02%	0.01%	0.06%	0.05%	0.01%	0.01%
Information services	-0.02%	0.02%	-0.02%	0.07%	0.01%	0.03%
Finance and insurance	-0.02%	0.01%	-0.02%	0.05%	0.00%	0.00%
Real estate	0.00%	0.01%	0.09%	0.03%	0.00%	0.00%
Professional services	0.12%	0.02%	-0.08%	0.06%	-0.02%	0.02%
Administration and waste management	-0.02%	0.01%	-0.08%	0.09%	0.00%	0.01%
Education	0.01%	0.00%	0.01%	0.07%	0.00%	0.01%
Health care and social assistance	0.03%	0.01%	-0.15%	0.13%	-0.01%	0.01%
Arts and entertainment	-0.02%	0.01%	-0.03%	0.04%	-0.01%	0.01%
Accommodation and food	-0.16%	0.03%	-0.07%	0.07%	-0.01%	0.01%
Other services	-0.02%	0.01%	0.05%	0.09%	0.00%	0.00%
Public administration	0.01%	0.01%	0.11%	0.06%	0.02%	0.01%
Firm size						
Firm size 1-9	-0.25%	0.06%	0.11%	0.13%	0.01%	0.01%
Firm size 10-99	-0.38%	0.05%	0.60%	0.13%	0.19%	0.04%
Firm size 100-499	-0.90%	0.07%	-0.04%	0.16%	0.02%	0.07%
Firm size 500+	0.79%	0.09%	-1.03%	0.16%	-0.16%	0.03%
Marital status						
Married	-0.11%	0.02%	0.30%	0.31%	-0.02%	0.02%
Separated, Divorced, Widowed	0.00%	0.00%	-0.08%	0.09%	0.00%	0.00%
Never Married	-0.12%	0.02%	0.01%	0.16%	0.00%	0.02%
Other worker characterisitcs						
Full time	-0.20%	0.03%	0.02%	0.34%	0.00%	0.01%
Part Time	-0.20%	0.03%	0.00%	0.06%	0.00%	0.01%
Number of Weeks Unemployed	-0.66%	0.07%	0.03%	0.08%	0.02%	0.07%
Non-Metro area	-0.01%	0.01%	0.06%	0.11%	-0.01%	0.01%
Metro Area	-0.01%	0.01%	-0.29%	0.49%	-0.01%	0.01%
Private sector	-0.01%	0.02%	-0.32%	0.65%	0.00%	0.00%
Public Sector	-0.01%	0.02%	0.02%	0.04%	0.00%	0.00%

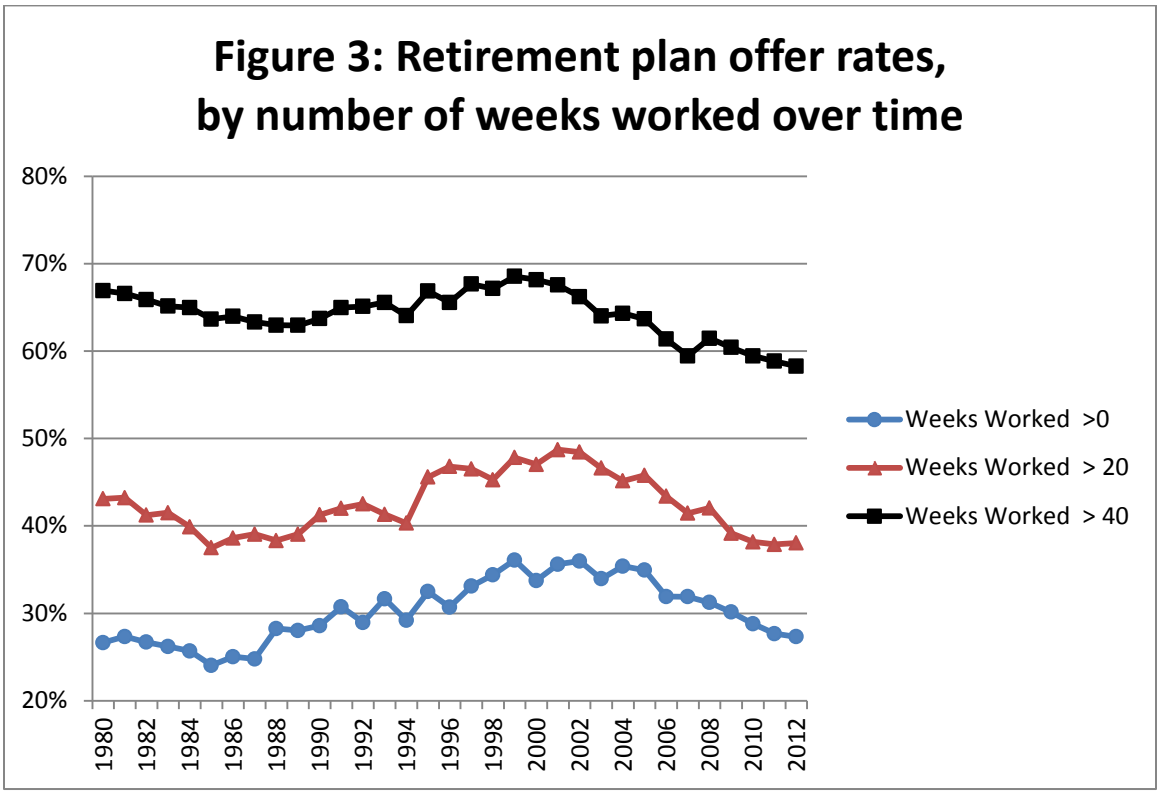
Appendix table 1. (continued)						
State level variables affecting bargaining power						
The percentage of workers younger than 40 in the state	1.33%	0.39%	57.84%	23.74%	-1.52%	0.70%
The percentage of workers with 2 yrs of college or more in the state	0.01%	0.49%	3.85%	6.13%	0.37%	0.60%
The percentage of employees working in tiny firms (9 employees or less) in the state	-0.06%	0.15%	-10.72%	6.31%	-0.32%	0.24%
The percentage of employees working in small firms (10-99 employees) in the state	0.02%	0.05%	-1.08%	11.44%	0.00%	0.05%
Unemployment rate for age group 21-34	-3.43%	2.05%	2.60%	3.21%	2.11%	2.60%
Unemployment rate for age group 35-44	0.27%	2.83%	2.68%	3.54%	2.49%	3.31%
Unemployment rate for age group 45-55	0.61%	3.99%	-3.47%	3.99%	-4.03%	4.74%
Trend in unemployment rate for age group 21-34	1.55%	0.84%	-1.82%	1.13%	-1.56%	1.05%
Trend in unemployment rate for age group 35-44	0.90%	0.65%	-1.91%	0.81%	-2.20%	1.02%
Trend in unemployment rate for age group 45-55	-0.32%	0.54%	0.93%	0.90%	0.86%	0.86%
State Unionization rate	-0.35%	0.25%	2.18%	2.27%	-0.29%	0.30%
Intercept			-54.09%	23.94%		
Data: current population survey, march supplement, 2001-2003 and 2010-2012. Sample restricted to wage and salary workers in the non-agricultural sectors, ages 21-55, working at least 1 wk/yr.						

Appendix Table 2. Second step calculation of cluster robust standard errors						
	2003			2012		
State Specific Intercept	Coef.	Std.	t	Coef.	Std.	t
The percentage of workers with 2 yrs of college or more in the state [1]	0.8%	0.8%	1.03	0.5%	0.5%	0.99
The percentage of employees working in tiny firms (9 employees or less) in the state [1]	22.9%	14.3%	1.61	1.0%	11.0%	0.09
The percentage of employees working in small firms (10-99 employees) in the state [1]	-42.6%	22.6%	-1.89	9.1%	20.8%	0.44
The percentage of workers younger than 40 in the state [1]	-24.0%	13.6%	-1.77	-18.5%	12.5%	-1.48
Unemployment rate for age group 21-34 [2]	0.1%	4.9%	0.02	2.0%	3.7%	0.53
Unemployment rate for age group 35-44 [2]	-8.0%	7.0%	-1.14	-1.9%	3.9%	-0.48
Unemployment rate for age group 45-55 [2]	13.5%	11.4%	1.19	-6.4%	4.0%	-1.58
Trend in unemployment rate for age group 21-34 [2]	2.1%	10.6%	0.2	-2.3%	6.3%	-0.37
Trend in unemployment rate for age group 35-44 [2]	-5.0%	10.7%	-0.46	2.3%	7.7%	0.29
Trend in unemployment rate for age group 45-55 [2]	-2.2%	13.1%	-0.17	3.0%	10.2%	0.3
State Unionization rate [1]	5.0%	6.4%	0.78	0.6%	4.7%	0.12
Intercept	124.1%	90.6%	1.37	39.9%	92.4%	0.43
Observations		47			47	
Adjusted R-squared		12%			4%	

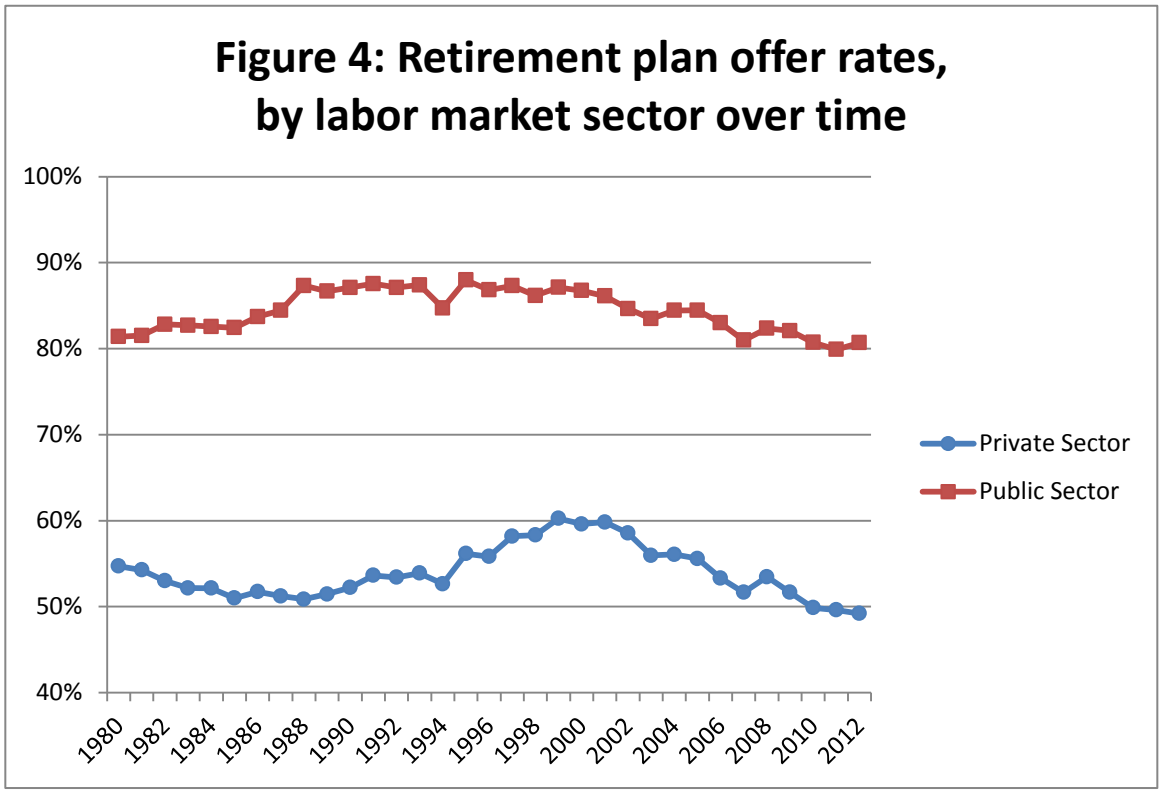
Data: Current Population Survey, March Supplement, 2001-2003 and 2010-2012. First stage probit regressions for NJ, Fl, RI did not converge. Since we do not have estimated intercept terms for those states, there are only 47 observations for the second step regression. [1]Refers to a 10 percentage point increase. [2]Refers to a 2 percentage point increase.



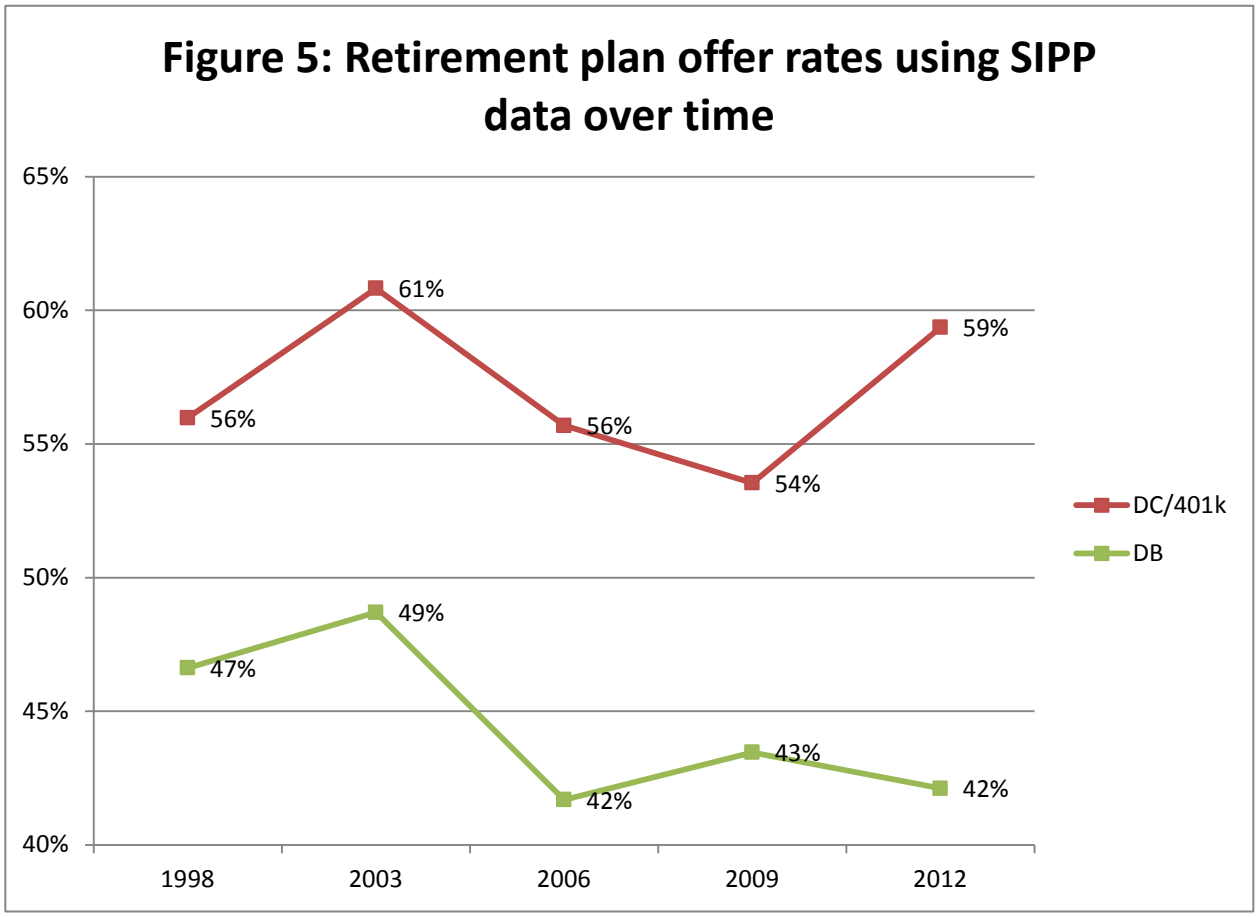
Source: CPS March Supplement data. Sample restricted to wage and salary workers in the non-agricultural sectors, ages 21-64, working at least 1 wk/yr. Authors' calculations.



Source: CPS March Supplement data. Sample restricted to wage and salary workers in the non-agricultural sectors, ages 21-55, working at least 1 wk/yr. Authors' calculations.



Source: CPS March Supplement data. Sample restricted to wage and salary workers in the non-agricultural sectors, ages 21-55, working at least 1 wk/yr. Authors' calculations.



Source: SIPP data from 1996 panel, wave 7, 2001 panel, wave 7, 2004 panel, wave 7, 2008 panel waves 3 and 11. Sample is restricted to wage and salary workers age 21-55. Authors' calculations.