DO LOW-INCOME WORKERS BENEFIT FROM 401(K) PLANS?

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ABSTRACT

Economists frequently assume that employees "pay for" employer-provided fringe benefits, such as contributions to retirement plans, in the form of reduced wages. Because low-income employees receive little tax benefit from saving in qualified retirement plans, however, and may prefer immediate consumption to additional retirement accruals, they may not be willing to accept a one dollar reduction in their wage in return for an additional dollar contributed to their 401(k) plan, while high income workers may be willing to give up more than a dollar in wages to get the tax benefit.

It has often proven difficult to estimate the hypothesized negative relationship between fringe benefits and wages because of an inability to identify fully differences in worker quality that cause some workers to receive more cash wages and more fringe benefits. This paper uses a sample from the *Survey of Income and Program Participation* (SIPP), matched with the Social Security Administration's Detailed Earnings Records (DER) to estimate the relationship between employer contributions to salary reduction plans and wages for newly hired employees. The data file enables us to supplement demographic data with data on a workers' earnings history to provide a better adjustment for worker quality. We find evidence that additional employer contributions to 401(k) plans reduce money wages much less for low-income than for high-income workers. This suggests that distributional analyses that assume a dollar of employer contributions reduces wages by a dollar for all workers may understate the benefit these plans provide for rank and file workers.

Introduction

High-income workers gain substantial benefits from the ability to accrue income tax-free within employer-sponsored defined contribution (DC) retirement plans, such as those allowed under section 401(k) of the Internal Revenue Code (401(k) plans). This paper asks whether these plans also benefit low-income workers. The traditional answer is that low-income workers receive very little benefit per dollar of contribution because the ability to accrue income tax-free is worth little to those facing low marginal tax rates on their return to saving. This traditional analysis is based on the assumption that every dollar contributed to a 401(k) plan displaces a dollar of cash wages for all workers, so that the distribution of total pretax compensation is unchanged. And if the tax benefit is worth little to those in low tax brackets, then the benefits per dollar of contribution go disproportionately to upper-income workers.

Low-income workers may under some assumptions benefit from employer contributions to 401(k) and other retirement plans even if the contributions displace an equal amount of cash wages. If workers lack foresight and would not otherwise save enough, an employer contribution or a deep subsidy to an employee contribution may benefit them over their lifetime. We do not consider whether additional forced or subsidized saving is desirable or whether it is preferable to employ "soft paternalism" approaches, such as default rules that require workers to make an active decision to decline participation.

Instead, in this paper, we examine more closely the assumption that employers' 401(k) plan contributions substitute for a dollar of cash wages for all workers. We consider reasons why employer contributions may increase total compensation for low-income workers. We then use a data set that includes job characteristics, demographic characteristics of workers, and information on workers' earnings in their current and prior jobs to estimate the effects of additional employer DC contributions on wages of low-income and high-income workers. We find some preliminary evidence that increasing the generosity of employers' DC contributions reduces wages of high-income workers by more than it reduces wages of low-income workers.

Traditional Analysis of Distribution of Benefits from 401(k) Plans

Employers have historically offered workers two types of retirement plans – defined benefit (DB) plans and defined contribution (DC) plans. In DB plans, employers promise to pay workers an annual annuity upon reaching the eligible retirement age. The annuity amount is typically calculated as a percentage of the product of the average salary over the employee's most recent years with the firm and the number of years in service. In some cases, annuity payments are partially or fully adjusted for annual changes in the cost of living. In DC plans, employers and/or employees contribute an annual amount to a plan held in the employee's name. The amount is invested in financial assets (sometimes in the stock of the employer, but typically in a more diversified portfolio of stocks and bonds). At retirement or upon separation from the firm, the employee receives the amount in the fund as a lump sum payment. The employee can,

however, choose to purchase an annuity with the payment or to roll over the amount into an individual retirement account (IRA) and withdraw the funds over time.

The federal income tax law allows assets to accrue tax free within qualified DB or DC retirement plans. However, prior to the early 1980s, tax-exemption of investment income within DC plans was generally available only for the portion of income from employer contributions. Some firms, nonetheless, had succeeded in establishing plans in which individual employees had some choice over the amounts contributed on their behalf. In the Revenue Act of 1978, Congress established rules that allowed employers to establish voluntary salary reduction plans under Section 401(k) of the Internal Revenue Code. Employee contributions to these plans were made exempt from federal income tax, the same treatment that was previously limited to the employer contributions. Section 403(b) allowed non-profit employers to establish similar types of plans.

IRS regulations issued in the next few years clarified rules for employee participation in these plans. Following the issuance of these regulations, participation in 401(k) and other salary reduction plans increased rapidly. Over the past 30 years, DC plans have replaced DB plans as the primary type of vehicle for retirement saving. Between 1975 and 2004, participation in employer-sponsored DC plans increased from 11 percent of the workforce to 34 percent, while participation in DB plans declined from 27 percent to 14 percent (Chart 1).

The tax law limits annual amounts that employees may contribute to employer-sponsored DC plans and also the combined amounts that employees and employers may contribute. In addition, qualified retirement plans are subject to a complex set of non-discrimination tests that require broad levels of participation by rank and file employees. The tax law provides employers with a number of ways of satisfying these requirements. These rules attempt to forge a compromise between the competing goals of allowing individual choice of participation and contribution levels and encouraging low and middle-income workers to save more for retirement. At one extreme, providing the tax benefit only for uniform employer contributions would force all employees to receive the same amount or share of their compensation as deposits in a retirement saving plan, assuming that the employer's contribution represents a diversion of part of the employees' total compensation from money wages to plan assets. But it ensures that plans do not provide more tax preferences either in absolute dollars or as a share of wages for the retirement saving of top executives and highly paid employees than for other employees. At the other extreme, the absence of any non-discrimination tests based on participation would allow each employee maximum choice between how much compensation she wants to receive in the form of taxable money wages and how much in the form of tax-preferred contributions to retirement saving accounts. But this freedom of choice would almost certainly produce a result that the tax preference disproportionately favors high earners, who are more likely to save and who gain the greatest benefit per dollar of contributions from tax preferences.

Chart1. Percent of Workers with an Employer Pension by Pension Type and Year: 1975-2004
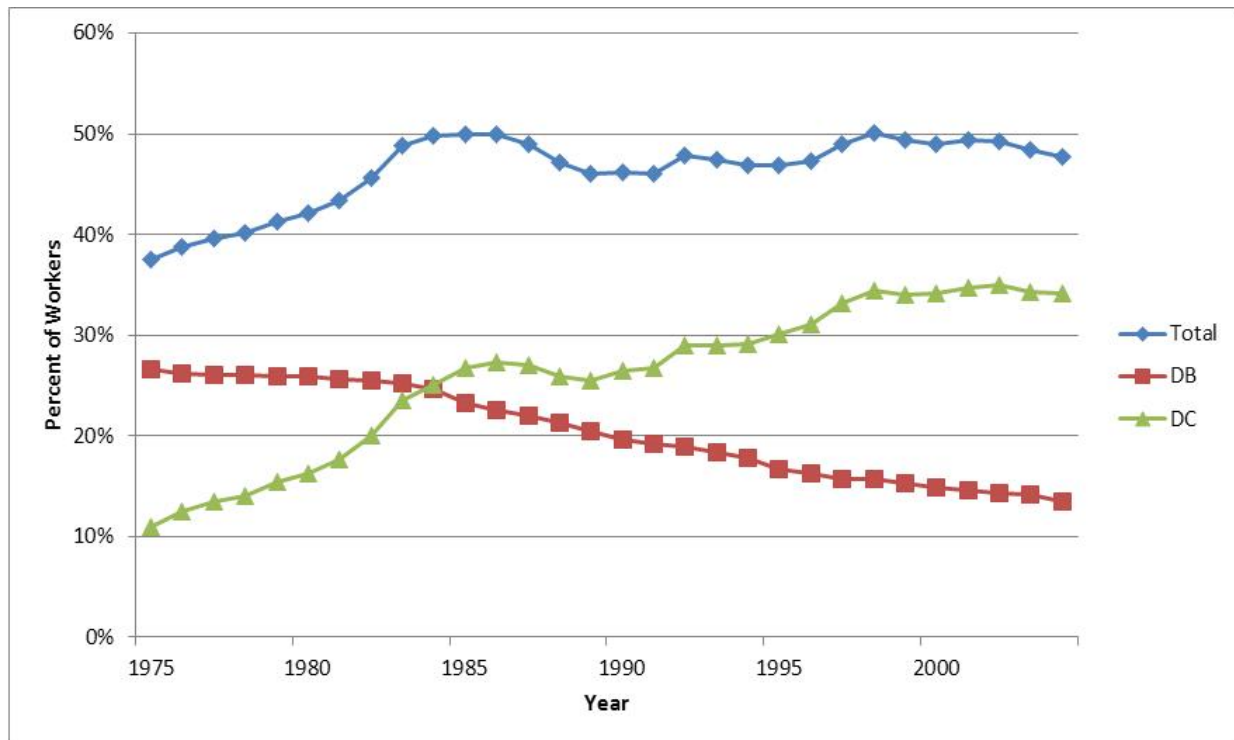
Source: Urban Institute calculations from U.S. Department of Labor (2008 table E8) based on active participants from Form 5500 data and employment data from the 1975-2005 March Current Population Survey.

In addition to employer-sponsored plans, the tax law provides other opportunities for individuals to receive the tax benefits of qualified retirement saving plans. Self-employed individuals may contribute to profit-sharing or money purchase plans, sometimes called Keogh plans after their original Congressional sponsor. Employees whose employers do not offer pension plans may contribute to individual retirement accounts (IRAs). Employees of companies that do offer pension plans may also contribute to IRAs if their incomes are below specified limits and, if not, may contribute to non-deductible IRAs that offer some, but less generous tax benefits. Employees with incomes below certain limits may also contribute to Roth IRAs, which provide no deduction for contributions, but exempt all subsequent income from assets and the proceeds of withdrawals from tax. And, since 2006, employers who sponsor 401(k) and 403(b) plans have been allowed to offer their employees the option to contribute to so-called Roth 401k or 403b plans.

Tax Benefits of Qualified Retirement Saving Plans

Under the general rules of an income tax, income is taxed as accrued. Workers pay tax on their wages in the year the earnings are received. If they save some of those earnings, the return on that saving is taxed annually. Because the accumulated savings have already been taxed, however, there is no additional tax when the funds are withdrawn for consumption in later years.

So if a worker invests a portion of her wage equal to W at a yield of r percent for n years, the amount available for consumption in year n is equal to $W*(1-t_w)*(1+r*(1-t_r))^n$, where $W*(1-t_w)=$ the contribution in the current year, t_w = the marginal income tax rate on the current year's wages, r= the rate of return on investment, t_r = the marginal tax rate on investment income, and n is the number of years until the proceeds of the savings are consumed. This tax treatment is often referred to as TTE because the contribution comes from after-tax wages (T), the earnings are taxed as accrued (T) and the withdrawals are not taxed (E).

In contrast, for savings invested within a qualified retirement plan, the contribution comes from pre-tax dollars, capital income within the plans accrues tax-free, and withdrawals are taxable (EET). If the worker saves a portion of her wages equal to W for n years, the amount available for consumption in year n is $W*(1+r)^n*(1-t_c)$, where t_c is the tax rate applied to income received in year n.

Thus, in comparison to standard income tax rules, saving in qualified retirement plans receives two benefits. First, savings accrue at the pretax rate r instead of the after-tax rate $r*(1-t_r)$. Over a long period of time, with capital income compounding, tax-free accumulation of income provides a substantial benefit. For example, if an individual invests $100 at a yield of 10 percent for over 20 years, she would accumulate $672.75 by year 20, almost 7 times the initial investment. If, however, she faced a 28 percent annual tax rate on her investment income, the annual yield would fall to 7.2 percent and the amount accumulated in year 20 would be $401.69 – still four times the original investment, but now less than 60 percent of what she would have received if allowed to accumulate income tax free.

Second, the deferral of tax on contributions to retirement plans until the account balance (deferred earnings plus investment returns) is withdrawn in retirement means that the present value of those earnings is taxed at the individual's marginal tax rate in retirement instead of her marginal rate when working. Because people's income usually declines after retirement, this deferral means that their earnings are taxed at a lower marginal rate.

Employees who contribute to Roth IRAs or 401k plans do not get a deduction for their contributions, but pay no tax on future accruals or withdrawals from plans (TEE). For an amount of pretax earnings W that is set aside for investment, the value available for consumption in year n is equal to $W*(1-t_w)*(1+r)^n$, where t_w is the marginal tax rate when working. Note that this is the same value as for deductible IRAs of 401(k) plans, except that the initial contribution W is multiplied by $(1-t_w)$ instead of $(1-t_c)$. In other words, the wages are taxed at the marginal tax rate while working instead of the marginal tax rate while consuming in retirement. This often makes deductible accounts more favorable than Roth accounts because usually $t_w>t_c$. But a compensating advantage of Roth accounts is that they have a higher effective contribution limit. Because the contribution limit is stated in nominal dollars instead of as the amount of current consumption foregone, a given contribution limit of X allows an individual to invest X dollars (after-tax) in Roth accounts, but only $X(1-t_c)$ dollars after-tax in deductible accounts. The amount

invested outside a qualified account does not benefit from the exemption of accrued income available within both forms of qualified plans.

Individuals who are not eligible to contribute to deductible or Roth IRAs may contribute to non-deductible IRAs. Income accrues tax free within non-deductible IRA, but accrued income is taxed when amounts are withdrawn, while withdrawals of contributions are tax-free. A dollar of pretax wages invested in a non-deductible IRAs produces available consumption after n years of $W*(1-t_w)*(1+r)^n – t_c*((W*(1-t_w)*(1+r)^n)-(W*(1-t_w))) = W*(1-t_w)*((1+r)^n*(1-t_c)+t_c)$.

The benefit from participating in qualified retirement plans is larger the longer the holding period (n) and the higher the individual's marginal tax rate on invested funds held outside of qualified plans, t_r. The rate t_r, in turn, depends both on the investor's marginal tax rate on her last dollar of income and on the availability of tax preferences for saving outside of qualified plans. These tax preferences include the following:

- *Special treatment of long-term capital gains*. Except for 1988-90, long-term capital gains have been taxed at rates lower than ordinary income since 1921. Currently, capital gains on assets held 1 year or more are tax-exempt for investors in the 15 percent rate bracket or below and taxed at a rate of 15 percent for taxpayers above the 15 percent bracket. (The capital gains rates are scheduled to rise to 10 and 20 percent in 2013.) In comparison, marginal rates on ordinary income are taxed at rates ranging from 10 to 35 percent (scheduled to rise to 15 to 39.6 percent in 2013). For any individual taxpayer, taxes on capital gains are deferred until the gains are realized through sale or exchange and are exempt if the assets are held until death or donated to charity.
- *Special treatment of qualified dividends*. Since 2003, qualified dividends have also been taxed at a maximum rate of 15 percent. Absent any change in the tax law, qualified dividends will again be taxed as ordinary income (at rates up to 39.6 percent) beginning in 2013.[1]
- *Tax-exemption of state and local bond interest*. Interest on state and local bonds is exempt from federal income tax, although subject to income taxes at the state level. The benefit of the tax-exemption is shared between investors in the bonds and borrowers, who benefit from a lower interest rate. For investors in high tax brackets, the "implicit tax" paid in the form of a lower interest rate is less than the explicit tax they would pay on interest from taxable securities.
- *Preferences for life insurance and annuities.* The accruing value of life insurance policies is exempt from income tax. Taxation of the accruing value of deferred annuities is deferred until the accruals are distributed as annuity payments.

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[1] The Affordable Health Care Act will impose a new additional tax of 3.8 percent on income from interest, dividends, and capital gains, beginning in 2013, to help finance the Medicare Hospital Insurance (HI) trust fund.

Burtless and Toder (2010) note that the value of tax preferences for qualified retirement plans has varied over time with changes in marginal tax rates and changes in tax treatment of capital gains and dividends. Over the past 25 years, the value of the tax preferences has declined because of the reduced taxation of income from capital gains and dividends accrued outside of qualified plans.

Incidence Assumptions

Employers compensate their employees with money wages and various fringe benefits, including contributions to health insurance plans, promises of future retirement benefits in defined benefit pension plans, contributions to defined contribution pension plans, and a variety of other forms of non-wage benefits, including premiums for life insurance policies, subsidized parking, subsidized housing and meals, and use of an automobile, among others. In general, employee compensation is deductible to the employer and taxable to employees, unless otherwise stated in the tax law. But some forms of employee fringe benefits, most importantly health and retirement benefits, receive favorable tax treatment. Employer contributions to health insurance plans are exempt from federal income and payroll taxes. Employer contributions to qualified retirement plans are exempt from payroll tax[2], income tax on them is deferred until the proceeds are distributed in retirement and wealth accrues tax-free within those plans. There are also exemptions of a floor amount of life insurance coverage and employer-provided parking. Finally, employers may establish cafeteria plans, under which employees may choose to take pre-tax deductions to pay for health insurance, group life insurance, and deposits to flexible spending accounts (FSAs). FSAs are principally used to pay for unreimbursed medical expenses and child care expenses.

Because the tax law allows employers to deduct all forms of compensation, economists generally assume that employers are indifferent between paying money wages and fringe benefits and choose the compensation mix that enables them to attract and retain the best employees per dollar of labor cost. From the viewpoint of employers, wages and fringe benefits are generally perfect substitutes, so that, all things held equal, an additional dollar of wages should substitute for an additional dollar of fringe benefits. That is, workers pay for fringe benefits in the form of lower money wages.

Studies of the distributional incidence of tax preferences for fringe benefits typically assume that, for every worker, each dollar of fringe benefits reduces money wages by one dollar and leaves total compensation unchanged. Therefore, the value of the tax benefit for fringe benefits is simply t_m*F, where t_m is the taxpayer's marginal tax rate and F is the value of fringe benefits received.[3] Studies of the distributional effects of tax preferences that assume fringe

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[2] Employee contributions to 401(k) and 403(b) plans are, however, included in the base for payroll taxes, even though they are deductible in determining taxable income.

[3] The analysis of exemptions for payroll taxes is somewhat more complex than the analysis for income taxes. Exempting fringe benefits from, for example, the base for contributions to the Old Age, Survivors and Disability Insurance Fund (OASDI), reduces the tax burden of workers, but also may reduce the present value of future

benefits leave total compensation unchanged include analyses by Burman, Uccello, Wheaton, and Kobes (2003); Burman, Khitatrakun, and Goodell (2009); Toder, Harris, and Lim (2011); and Burman, Gale, Hall, and Orszag (2004). The U.S. Treasury Department, the Congressional Budget Office, and the Joint Committee on Taxation also use the same assumption in their distributional analyses.[4]

Why High-Income Workers Benefit More

These standard distributional analyses find that tax benefits for qualified retirement plans disproportionately benefit high-income workers for three reasons:

Higher Participation Rates. High-income workers are more likely to participate in qualified retirement plans than low-income workers. They are more likely to work for an employer who offers a plan. If a plan is offered by their employer, they are more likely to participate. They are more likely to participate in qualified retirement plans for the self-employed (profit-sharing and money purchase plans). They are more likely to contribute to individual retirement accounts.

Higher Average Contribution Rates. For employees who do participate in retirement plans, high-income employees contribute more than others and less than 8 percent of workers, most of them at the highest incomes, contribute the maximum amount (Kawachi, Smith, and Toder 2006). The result of the higher participation and contribution rates is that high-income households hold a disproportionate share of assets in employer-sponsored defined contribution plans and individual retirement accounts. For example, in 2007, households in the top fifth of the income distribution held about two-thirds of assets in DC accounts and those in the top 10 percent held half of DC assets.[5]

Higher Tax Benefit per Dollar of Contribution. Higher income employees benefit more than others per dollar contributed to qualified retirement plans because of the progressive nature of the U.S. income tax system. As discussed above, the principal advantage of qualified plans is that employees can accrue income tax-free within them. So, while everyone can accrue risk-free interest income at the pretax rate r within qualified plans, high-income workers in the 35 percent bracket can accrue interest income at a rate of only 0.65*r outside of plans, while the majority of workers who are in either the 15 percent bracket or below the taxpaying threshold can accrue income at either 0.85*r or r outside of plans.

OASDI benefits. So the net benefit from a payroll tax exemption per dollar of tax saving could be less than the net benefit per dollar of tax saving from the same exemption from the income tax base.

[4] For an exposition of the methodology used by the U.S. Treasury Department, see Cronin (1999).

[5] This calculation is based on Tax Policy Center computations from data from the Federal Reserve Board, Survey of Consumer Finances (2009).

Is the Standard Incidence Assumption Correct?

The standard incidence assumption follows from the fact that employers should, at the margin, be indifferent between paying an employee an additional dollar of wages and paying that same employee an additional dollar of non-wage compensation because both have the same marginal cost to them, once they have established the administrative structure for delivering fringe benefits. In some cases, employers may prefer paying fringe benefits, however. For example, deferred compensation arrangements may encourage workers to remain longer with a firm, enabling the firm to recover any investments in job-specific training and benefit from firm-specific human capital that is tied to longevity with a single employer (Johnson 1996).[6] If employers believe fringe benefits raise productivity, they may lower money wages by less than a dollar per dollar increase in fringe benefits, resulting in a positive correlation between fringe benefits and total compensation. Because assets in 401(k) plans are portable, however, and are typically vested either immediately or within a short period of time, they may not be a very effective tool for encouraging workers to stay longer with a firm.[7]

On the other side of the wage negotiation, workers in general probably do not regard wages and fringe benefits as perfect substitutes. Suppose, for example, the tax system did not favor capital income accrued within qualified retirement saving plans over capital income accrued outside of plans. Then, workers who might otherwise save less than the amount employers are contributing to their plans would prefer cash compensation to plan contributions. Employees with a strong preference for current consumption over saving would then be willing to accept less than a dollar in reduced wages in exchange for a dollar of plan compensation. In a competitive labor market, these employees in theory would require higher total compensation from firms that contributed more to retirement saving plans than from firms that contributed less.[8] But with a tax benefit for retirement saving, those employees who wanted to save more would prefer the opportunity to save within a tax-favored qualified plan. So high tax bracket savers would require less compensation for firms that contributed more to retirement plans than from firms contributing less.

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[6] Other fringe benefits also may increase worker productivity. For example, provision of health benefits may result in a healthier work force with higher productivity on the job and lower costs of sick leave.

[7] The Tax Reform Act of 1986 required single-employer private plans to fully vest within five years for cliff vesting or within seven years for graduated vesting. In 1997, 29 percent of DC plans had immediate vesting, 30 percent had cliff vesting, and 33 percent had graduated vesting (VanDerhei and McDonnell 2000). The Pension Protection Act of 2006 accelerated vesting requirements for employer contributions. Contributions made after December 31, 2006 are subject to three year cliff vesting or two to six year graduated vesting (Internal Revenue Service 2007).

[8] Some evidence that many workers would prefer that employers paid them higher wages in place of retirement plan contributions comes from studies that show that most workers cash out their 401(k) plans when a job change gives them the opportunity to do so without penalty. Purcell (2009) reports that 55 percent of job separators receiving lump-sum distributions did not roll over all of their distribution. Verma and Lichtenstein (2006) find that half of all boomers born between 1946 and 1965 receiving lump-sum distributions did not roll over the money. Burman, Coe, and Gale (1999) also find that most participants do not roll over their funds into qualified accounts, but the likelihood of rollovers rises for larger distributions.

Economic Reasons for Firms to Contribute to 401(k) Plans

When firms establish 401(k) plans, they provide their employees with an opportunity to save more in qualified retirement accounts than they could with IRAs. And employees have the voluntary choice of how much of their taxable cash wages to shift into tax-preferred retirement accounts. Why then, would employers want to contribute to 401(k) plans in lieu of simply paying higher cash wages and giving employees the choice of how much to contribute? Firms may for paternalistic reasons wish to encourage their employees to save, but there may be self-interested reasons as well. First, the combined employer-employee contribution limits are much higher than the employee contribution limits, so employer contributions allow for larger deferrals. But this is not too important a factor because current limits on employee contributions constrain only a very small share of employees (Kawachi, Smith, and Toder 2006). Second, as noted above, firms may seek to encourage workers to remain with the firm longer, although the portability of 401(k) accounts makes them a relatively ineffective way to bind workers to a firm. Alternatively, firms may seek to attract workers with a high saving propensity on the theory that these are better workers. Third, although both employee and employer contributions to 401(k) plans receive preferential treatment under the income tax, only employer contributions are exempt under the payroll tax. Finally, non-discrimination rules may induce employers to provide incentives for low-income workers to participate in plans in order to enable plans to qualify so that high-income workers can enjoy the tax benefits. We briefly expand on the last two reasons and then comment briefly on the use of automatic enrollment as an alternative way to increase participation.

Payroll Tax Treatment. Employer contributions to 401(k) plans are exempt from the payroll tax base, while employee contributions are subject to both the employer and employee share of the tax, amounting to 15.3 percent of the cash wage for earnings below the OASDI maximum amount ($106,800 in 2011) and 2.9 percent of wages for earnings above the OASDI maximum. But employer contributions also do not count towards the computation of an employee's future Social Security retirement benefits, while employee contributions do add to those benefits. So the net payroll tax saving for employees of an additional dollar contributed by the employer to a 401(k) plan substitutes for a dollar of cash wages (whether used for current consumption or an employee contribution) is equal to 15.3 cents less the present value of increased retirement benefits associated with an additional dollar of wages.

Unlike income taxes, which have graduated rates, payroll taxes are proportional to earnings through most of the income tax distribution and then drop off for very high earners. But low-income workers also receive the highest replacement rates from OASDI, so they gain little benefit or even suffer a long run income loss if more of their compensation becomes exempt from payroll tax. High-income workers, who receive relatively low replacement rates, would in contrast be better off if more of their compensation was exempt from payroll tax. In addition, some workers with temporarily low incomes may benefit from substituting employer for employee contributions or cash wages. For example, young workers at the beginning of their

careers would benefit from the exemption if their future earnings are likely to increase, so that the current year's OASDI earnings does not add to the high 35 years upon which benefits are computed and therefore does not raise their benefit in retirement.

Non-Discrimination Rules. Non-discrimination rules for pension plans date back to the 1930s and have been modified numerous times since then (Bankman 1988; Brady 2007). In enacting these rules, Congress had two related motives: 1) to discourage firms from establishing "top-heavy" pension plans that provided excessive benefits to highly compensated employees, and 2) to encourage more rank and file participation in plans. The rules are highly complex, but basically they divide employees into two categories – highly compensated (HCE) and non-highly compensated (NCHE) and establish tests based on the ratios of participation and/or contributions of HCEs and NCHEs. There are also various "safe-harbor" provisions that allow firms to qualify through either minimum firm contributions to plans of all employees or matching formulas for all elective deferrals.

Brady (2007) notes three possible marginal effects of non-discrimination rules: 1) no effect if firms qualify without modifying their behavior, 2) a reduction in pension contributions or benefits paid to highly-compensated employees, or 3) an increase in pension contributions or benefits paid to non-highly compensated employees. In addition, the complexity of complying with the rules could cause some firms to decide against establishing a plan, which would reduce coverage for rank and file employees. Reforms that provide more "safe harbors" for firms make it easier for them to establish plans, but also may reduce the amount by which plans need to subsidize non-highly compensated employees.

Brady finds that non-discrimination rules provide incentives to subsidize saving of low-income earners only to firms with high ratios of high-income to low-income earners. For firms with significant shares of low-income earners, the cost of the subsidy is large per dollar of tax benefit for high-income earners from additional contributions. Therefore, it is not cost-effective to subsidize their participation so that high-income earners can also contribute more. Ippolito (1997) also finds that nondiscrimination rules by themselves do not provide a large enough incentive to justify the offering of employer matching contributions by large employers. Further, Mitchell, Utkus, and Yang (2007) find that, although many NHCEs do participate in 401(k) plans, employer subsidies only induce about 10 percent of eligible NHCEs to join plans.

Why Wage Reduction per Dollar of Contribution May Differ Among Workers
Regardless of the motivation for employers to contribute to 401(k) plans, substituting employer contributions for cash wages generally benefits high-income workers more than low-income workers. But the conditions determining whether any worker would prefer an additional dollar of employer deposits in a retirement saving account to an additional dollar of cash wages are quite complex. The relative value of cash wages and employer 401(k) contributions will differ depending on whether the employee would otherwise consume an additional dollar of wages or contribute that dollar of wages to her 401(k) account. Among those who would

otherwise consume additional wages, the relative value of employer contributions depends on the size of their benefit from tax-free saving and their degree of preference for present over future consumption. Among those who would reduce their employee contribution if their employer contributed more, the net benefit of the employer contribution depends on their net benefit from the combination of lower payroll taxes and lower future Social Security retirement benefits.

A. Employees Who Would Substitute Employer for Employee Contributions.

If the employee is contributing more to the 401(k) plan than the employer, but less than the maximum eligible amount, additional employer contributions will displace employee contributions. Suppose the maximum eligible employee contribution is 16 percent of earnings, but the employee wishes to save only 13 percent of earnings. If the employee is contributing 10 percent, and the employer is contributing (either as a flat or maximum matching amount) 3 percent, then if the employer contribution rises to 4 percent, the employee contribution can fall to 9 percent and still leave the employee contributing her preferred amount (13 percent of total compensation) to the plan.

For this employee, the value of an additional dollar of compensation before all taxes is equal to $V(W) = (1-(t_b/(1+t_b)))*(1- t_p- t_c +s+v(t_r))$, where $V(W)$ = value of cash wages, t_b = the employer's marginal payroll tax rate on the employee's earnings, t_p = the employee's marginal payroll tax rate, t_c = the employee's marginal income tax rate when the funds from the 401(k) are withdrawn in retirement, s = the present value of incremental Social Security benefits associated with an additional dollar of cash wages, t_r = the tax rate that would be applied to the worker's saving outside of a 401(k) plan and $v(t_r)$ = the present value of being able to accrue an additional dollar of savings within instead of outside a 401(k) plan. The amount $(1-(t_b/(1+t_b)))$ represents the amount the employee receives net of the employer's share of payroll taxes, but before payment of employee taxes. It is the base for computing employee payroll taxes, the present value of federal income taxes on future withdrawals, and future Social Security retirement benefits.[9]

The value of an additional dollar of compensation in the form of employer contributions to a 401(k) plan for the employee who would otherwise substitute an employee contribution is $V(S) = (1-t_c)+v(t_r)$, where S is the employer contribution, set equal to the wage gross of all taxes. Employer contributions are not reduced by the employer share of the payroll tax and the employee does not pay payroll tax or receive incremental retirement benefits associated with higher money wages.
Therefore, when employer contributions substitute for employee contributions, the value of substituting a dollar of employee contributions for a dollar of pretax wages is

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[9] Suppose for example, the employer's payroll tax rate is 7.65 percent of money wages. If money wages are $100, then the cost of compensation to the employer paying $100 of wages is $107.65. The effective tax rate as a share of pretax compensation is 7.65/107.65, or 7.11 percent. But the employer payroll tax contribution is not part of taxable wages and so is not part of the base used for calculating the employee's income or payroll tax liability.

$V(S) - V(W) = (t_b/(1+t_b))*(1-t_c+v(t_r)) + (1-(t_b /(1+ t_b))*(t_p-s))$.

The benefit of substituting a dollar of employer contribution is thus equal to the sum of 1) the reduced employer payroll tax multiplied by increased saving accumulation within 401(k) plans less the income tax paid in retirement from that additional dollar of net of employer payroll tax compensation and 2) the cash wage to the employee net of employer payroll tax multiplied by the difference between the payroll tax on that wage and the incremental present value of future Social Security retirement benefits.

The substitution of employer for employee benefits provides relatively larger benefits to 1) employees who would otherwise face lower marginal income tax rates in retirement, 2) employees who face higher marginal tax rates on their saving and so benefit more from tax-free accruals of capital income, and 3) employees who receive a lower return on incremental Social Security contributions.

B. Employees Who Would Not Invest Additional Cash in 401(k) Plans.

Two very different groups of employees would not invest additional cash wages in 401(k) plan deposits. The first group is those whose contributions to 401(k) plans are already at the maximum, so they cannot contribute more. For these taxpayers, employer contributions present an opportunity to put more money away in tax-qualified plans. The second group is those who are not contributing to plans and would prefer an additional dollar of cash wages they can use for immediate consumption needs than to an additional dollar of 401(k) plan wealth. For both of these groups, the value of an additional dollar of cash wages is $V(W) = (1- (t_b/(1+t_b)))*(1- t_p- t_w + s)$, where t_w = the marginal income tax rate on current wages.

The difference between these non-contributing workers and the contributors is that the contributors who are constrained by the cap would prefer that their employer contribute more to their plan, while the non-contributors would value an additional dollar of wages more than they value an additional dollar added to their 401(k) plan. The value of a dollar of employer contributions is equal to

$V(S) = (1-t_c)+ v(t_r) - u(c)$, where $u(c)$ represents the subjective incremental value to the employee of receiving a dollar of current wages in place of a dollar of retirement plan assets that is costly to access immediately.

The value of substituting a dollar of employer contributions for wages, $V(S) - V(W)$, is now equal to $((1-t_c)+ v(t_r) - u(c)) - ((1- t_b/(1+t_b))*(1- t_p- t_w + s))$. Therefore, for workers who would otherwise not deposit additional wages in a retirement account, the value of substituting employer deposits to 401(k) accounts for compensation varies:

- positively with the benefit from accruing income within qualified plans, which varies positively with the marginal tax rate on capital income

- negatively with the preference for current consumption over saving
- positively with the burden of payroll taxes, net of future retirement accruals
- positively with the difference between the marginal tax rate on current earnings and the marginal tax rate on future retirement income.

C. Differences between Workers at Different Income Levels

Low-income workers are less likely than high-income workers to contribute to 401(k) plans, when offered, so they may be more likely to be in the second group, where contributions substitute for taxable wages. A minority consisting mostly of the highest earners, however, contributes the maximum allowable amount of employee contributions to 401(k) plans and so would also see additional contributions replace taxable wages.

Among those who would otherwise not contribute, the benefits of 401(k) contributions are generally much higher for upper income than for lower income workers because:

- They are in higher income tax rate brackets and so gain more benefit from the opportunity accrue income within qualified plans.
- They are typically less financial constrained, so are less likely to prefer consumption for immediate needs to additional saving in a tax-preferred form.
- Because of graduated individual income tax rates, higher income workers currently in the 25-35 percent marginal rate brackets may be more likely to face relatively higher marginal rates in their earning years compared with retirement years than lower income workers in the 0, 10, or 15 percent tax brackets.
- They benefit more from the exemption of OASDI payroll taxes than lower income workers because their marginal OASDI tax rate is higher, when one takes account of the lower incremental Social Security benefits they receive per additional dollar of covered wages. Workers with earnings above the OASDI wage threshold ($108,600 in 2011) pay no OASDI tax and receive no benefits from additional wages, however.[10]

For those workers who would otherwise contribute to their own 401(k) plan, the principal difference between employer and employee contributions is the exemption of payroll taxes when the contribution comes from the employer. The exemption allows more money to be deposited by the employer than the employee, per dollar of pretax compensation, which benefits higher income workers more because they gain more from the tax exemption of capital income. And it

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[10] They do benefit from exemption of the HI tax, which is 2.86 percent of gross wages above the OASDI threshold and 2.69 percent of gross wages below the OASDI threshold. (Recall that gross wages are wages plus the employer share of the payroll tax. So the HI tax, which is 2.9 percent of wages net of the employer tax, is (2.9/1.0145) percent of gross wages for earnings above the OASDI threshold and (2.9/1.0765) percent of gross wages for earnings below the threshold.)

also benefits higher income workers more because they typically receive lower replacement rates on OASDI contributions than lower income workers.

D. Implications

If higher income workers benefit relatively more from substitution of employer 401(k) contributions for cash wages, they will in theory be willing to accept a relatively larger reduction in wages than lower income workers per dollar of increased employer contributions. But, abstracting from possible effects on employee retention or productivity, employers should be indifferent between 401(k) contributions and gross of tax cash wages, suggesting a dollar for dollar trade-off between them. It is unclear, therefore, whether employer or employee preferences determine the arbitraging conditions between the two forms of compensation. In the next section, we discuss the design of an empirical test to determine the trade-off between wages and employer contributions.

Methodology

We estimate the effects of increased employer offers and contributions to defined contribution (DC) plans on earnings of low-income and high-income employees, holding constant other measures of job characteristics and measures of worker quality. The objective is to test the hypothesis that employer contributions reduce earnings of low-income workers by less than they reduce earnings of high-income workers.

The data sources for the project are the 2004 and 2008 panels of the Survey of Income and Program Participation (SIPP), matched to longitudinal Social Security administrative earnings data from the Summary Earnings Records (SER) and Detailed Earnings Records (DER). The longitudinal data include information on Social Security covered earnings between 1951 and 2008, full earnings between 1978 and 2008, and employee contributions to DC retirement accounts between 1990 and 2008.

The availability of historic earnings from the administrative data allows us to adjust for differences in worker quality much better than we could using only the income and demographic variables in the SIPP data. Data from the SIPP allow us to identify job characteristics, such as whether workers are offered a pension or health insurance plan, pension plan type (DB, DC, or cash balance), and whether and how much employers contribute to a plan. The SIPP data also include numerous demographic characteristics, such as education level, race, age, and gender for all household members. But the SIPP data on worker characteristics are an incomplete indicator of worker quality and omit significant variation in ability to earn income within work-gender-race-age groups. The administrative data on past earnings allows us to identify characteristics unique to each worker that help explain the compensation he or she can command in the labor market. We exploit the administrative data to construct worker quality measures including using

number of work years and earnings in jobs held prior to the current job that are not available on the SIPP data.

We estimate ordinary least squares multivariate regression equations to estimate the extent to which cash wages of a worker with a particular pension arrangement differs from the cash wage of a worker without pension coverage, holding constant worker quality and other job characteristics. Our sample consists of workers who have held their current job for between one and five years and had at least one prior job.[11] Our worker quality measures include demographic variables from the SIPP and measures of previous earnings history. We make separate comparisons of the effects of DC pension coverage on current wages and, among covered workers, the effects of employer contributions on current wages. For each of these comparisons, we estimate separate equations for male and female workers by family income. We classify workers in the bottom 40 percent of the family income distribution as low-income, and those in the top 40 percent as high-income.

Data on earnings, job tenure, and employee retirement account contributions come from the DER. The DER is an administrative data file based on reports by employers and self-employed individuals to the Internal Revenue Service (IRS). The DER allows us to track individuals' annual earnings and job tenure between 1978 and 2008. For each job in each of those years, the DER includes an employer identification number, taxable earnings, Social Security covered earnings, and Medicare covered earnings. Between 1990 and 2008, it also includes annual deferred earnings (workers' contributions to tax-deferred retirement accounts). We use the DER to calculate total earnings, which are defined as taxable earnings plus deferred earnings. (As noted above, deferred earnings are subject to payroll tax, but not income tax.) We use the employer identification numbers on the DER to construct job start and end years for each job for each worker.

The SIPP provides demographic information, including sex, race, ethnicity, birth year, immigrant status, marital status, and number and ages of children. We create variables for health limitations and health status based on self-reported data.[12] We assign union coverage and information about employer-provided health insurance from the SIPP core data. We assign pension characteristics from the SIPP pension topical modules (wave 7 in the 2004 SIPP and wave 3 in the 2008 SIPP). Pension characteristics include type of pension and information about employers' pension contributions. Pension types include DB only, DC only, cash balance only (CB), or dual plan (DB and DC, CB and DC). Employer pension contributions include the

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[11] We limit the sample to new workers to reduce the likelihood that pension characteristics (observed only at the SIPP pension topical module) have changed over the period of employment. We require workers to have a prior job to exploit the earnings on prior jobs as a measure of worker quality.

[12] Health limit is based on the core SIPP question: "Does … have a physical, mental, or other health condition that limits the kind or amount of work … can do?" in the month of the pension topical module (month 28 in the 2004 SIPP and month 12 in the 2008 SIPP). Health status is based on the SIPP question: "Would you say your health in general is excellent, very good, good, fair, or poor?" asked in topical module 6 of the 2004 SIPP and topical module 4 of the 2008 SIPP.

contribution amount and information about whether the employer's contribution depends on the worker's contribution (no contribution, fully dependent, partly dependent, or not dependent).

We limit the estimation sample to workers with earnings in the pension topical module year (2005 for the 2004 SIPP and 2008 for the 2008 SIPP) that had been on that job for one to five years and who also had a prior job. We include workers who may have had gaps in employment between the current job and the prior job or jobs. We include as indicators of "worker quality" the number of work years in all jobs prior to the current job, earnings in the five years prior to the current job start year, and employment status in the five years prior to the current job start year.

We measure earnings variables as log (annual earnings divided by the economy-wide average wage + 0.25). The log transformation adjusts for the fact that the earnings data is highly skewed at the top of income distribution. Dividing by the average wage adjusts for the growth in wages over time, so that any observation represents the worker's wage relative to the entire population in that year. Adding 0.25 allows us to use the log transformation for individuals with no earnings in any year.

In all our equations, the dependent variable is the log of current earnings relative to the average wage plus 0.25 for workers on the job for one to five years. We estimate separate equations for earnings of male and female workers and, within gender groups, for all workers, workers with low family income, and workers with high family income (Tables 1a and 1b). Independent variables in the regressions include demographic variables, characteristics of the new job, and the worker's prior earnings history.

- Demographic variables include age (expressed as a series of age splines with inflection points at ages 35 and 55 for men, and ages 35, 45, and 50 for women)[13], education dummies (less than high school is the omitted group), dummy variables for Black and Asian (White is the omitted group), a married indicator, and the number of children less than 18 (capped at three for men). The model also includes self-reported health status dummy variables (excellent health is the omitted group) and an indicator for whether the worker has a condition that limits the amount or type of work. The female models also include dummy variables for the presence of children under age 6 and children ages 6-12, and the total number of children under age 18.
- Current job characteristics include pension type dummies for DB, DC, and CB coverage. No pension coverage is the omitted group. We also include pension dummies interacted with family income. We also include an indicator for whether the worker is covered by a union contract and dummy variables about employer-provided health insurance. Values include whether the employer offers no

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[13] Age splines are zero until age 35.

insurance and whether the employer or union pays all health insurance costs. The omitted category is whether the employer pays for part or none of the health insurance cost.

- Employee characteristics include the number of years the individual has worked for the current employer[14], work experience on prior jobs, dummy variables for the presence of earnings, earnings in prior year, and pension coverage on prior jobs:
  - Because we include only recent job changers, current job tenure ranges from one to five years.
  - Work experience on all prior jobs is included as a series of work year splines with inflection points at 5, 15, and 25 for men and 5, 10, and 25 for women.
  - Work dummy variables are included for each of the five years prior to the current job start year (referenced as t=0), where the work dummy is set to one if the individual had positive annual earnings and zero if the annual earnings is zero.
  - Earnings for each of the five years prior to the current job are expressed as the natural logarithm of annual earnings relative to the annual economy-wide average wage plus 0.25.
  - Pension coverage from prior jobs includes both prior DC coverage and prior DB coverage. Prior DC coverage is based on having any employee DC contributions from the DER from a prior job (from 1990 to the year before the current job started). Prior DB coverage is based on self-reported prior job pension coverage from the SIPP pension topical module.

For workers who are offered a DC plan, we estimate similar equations that explain earnings as a function of demographic characteristics, job characteristics, and prior earnings histories (Tables 2a and 2b). In these equations, we include as explanatory variables of interest the employer's contribution divided by the worker's earnings and the employee contribution divided by the economy-wide average wage. Simply including the employer contribution level as a measure of employer generosity would create a spurious positive correlation between earnings and the generosity of employer benefits because, in matching plans, the employer contribution is tied by formula to how much the employee contributes. What we want is an independent measure of the generosity of the employer contribution formula. But we only have data on the total employer contribution and some plan features, not the exact parameters of the employer plan. Therefore, we use as the key explanatory variable the ratio of the employer contribution to the employee earnings, while controlling for the level of employee contributions.

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[14] The parameter estimate for job tenure is larger than the negative parameter estimates for the age splines. The combined effect is for earnings to increase faster than wage growth with increased job experience but at a declining rate after age 35.

We also include additional dummy variables that describe characteristics of the employer plan, including whether the employer's contribution depends entirely on the worker's contribution, whether the employer's contribution depends partly on the worker's contribution, and whether the employer's contribution does not depend on the worker's contribution. The omitted group is employers who make no contribution.

Previous studies that have attempted to estimate compensating wage differentials for employer provided benefits, including health benefits and pension benefits, from cross-section data have often failed to find the hypothesized negative relationship between benefits and wages. Inkmann (2006) cites numerous studies that have failed to identify the expected relationship. Usually, findings that fail to confirm the theoretical expectations are explained as resulting from an omitted variable bias associated with insufficient measures of worker ability (Currie and Madrian 1999). Some papers, however, have been able to identify negative effects on wages from discrete changes in policy, such as state mandates for certain forms of insurance coverage (Gruber 1994). Other studies have been able to exploit longitudinal data to identify compensation differentials for pension plans contributions (Inkmann 2006) and to estimate that health insurance premiums increase the dispersion of wage income (Lehrer and Pereira 2007). Our research attempts to exploit the availability of a better measure of worker quality, based on the longitudinal administrative earnings data, to test for the existence of compensating differentials associated with pension benefits and estimate how they might differ between workers from low-income and high-income households.

Findings and Interpretation
Earnings on new jobs among male workers vary with demographic characteristics, earnings on previous jobs, and characteristics of the job (Table 1a). Earnings are higher for those with more education, lower for Blacks than for other racial groups, higher for married than unmarried workers, and lower for those with poorer health. Earnings vary positively with tenure on the current job and positively with earnings in prior jobs, with a much higher coefficient on earnings in the previous year than the coefficient on earnings in earlier years. But, all else the same, earnings are lower for those with some earnings in each of the previous four years than without earnings, possibly capturing a difference between permanent low earners and those who temporarily dropped out of the work force.

Earnings are higher for those covered by a union contract than for non-unionized workers. Contrary to the compensation differentials hypothesis, however, workers who are not covered by health insurance receive lower wages than covered workers. Also, workers who are offered a pension plan (DC, DB, or CB) receive higher wages than those without an offer of coverage. This suggests a form of labor market segmentation, where some jobs offer both higher wages and benefits and others offer neither, even after controlling for workers' demographic characteristics, past earnings, and the presence of a union in the workplace.

The results for female workers are similar to male workers, but differ in some respects (Table 1b). As with males, female earnings rise with more education and better health status. However, the difference in earnings between Black and White females is not statistically significant, controlling for other factors, while females of Asian descent earn more than Whites, and immigrant females earn more than native-born. Earnings of females are not statistically related to their number of children, but are lower for those with young children than for others. As with males, female earnings vary positively with current job tenure and earnings in prior jobs, with the coefficient on earnings lagged one year much larger than the coefficients on earnings in the preceding four years. As with males, holding other variables constant, females who have been out of the labor force in years before the current job earn more on the new job than females who have been in the labor force. Also, as with males, females with no health insurance coverage earn less than those with coverage, and females with a pension plan offered by their employer (DB, DC, or CB) earn more than those who are not offered a pension plan at work.

The key variable we are investigating in this paper is, among those offered a DC plan, whether wages are lower when employer DC contributions increase and whether the relationship between wages and employer DC contributions differs between low-income and high-income workers. Holding other determinants of earnings constant, we find for males that a one percent increase in the employer contribution to DC plans per dollar of worker earnings reduces earnings by .413 percent for workers generally, .329 percent for workers in the bottom two quintiles of the income distribution, and .449 percent for workers in the top two quintiles of the distribution (Table 2a). For females, we estimate that a one percent increase in the employer contribution to DC plans per dollar of worker earnings reduces earnings by .419 percent for workers generally, .171 percent for workers in the bottom two quintiles of the income distribution, and .819 percent for workers in the top two quintiles of the distribution (Table 2b).

Although we have estimated equations in log-log and semi-log functional forms, our major questions have to do with the comparative magnitudes of the slopes – that is the absolute dollar reduction in wages associated with access to pension plans for males and females and, especially the wage reduction associated with additional employer contributions to pension plans. For the log-log equations, the slopes can be calculated at the mean value of the sample as follows:
$dy/dx = b*Mean (y)/Mean(x)$, where b is the parameter estimate, x is the employer contribution per dollar of employee contribution, and y is the wage of the employee.

As noted above, DC and DB offers are generally associated with higher earnings for both female and male workers, suggesting that a degree of labor market segmentation between high wage/high benefit firms and low wage/low benefit firms. The slopes are quite small at the mean value of DC and DB offers (summarized in top two panels of Table 3). In most cases the

difference in wages between receiving or not receiving a pension offer is less than 12 cents.[15] The only case where wages fall with a pension offer is the case of DB benefit coverage for male workers with low family income. There also appears to be no consistent pattern of differences in the slopes for low-income and high-income workers.

The estimates of the effect of *additional employer* contributions for workers who do have DC pension coverage are more interesting. Among male workers, an additional dollar of employer DC contributions replaces 90 cents of earnings for workers with high family income, but only 29 cents for workers with low family income (summarized in bottom two panels of Table 3).[16] Among female workers, an additional dollar of employer DC contributions replaces 99 cents of wages for workers with high family income, but only 11 cents of wages for workers with low family income.

These results are consistent with the hypothesis that low-income workers in firms that offer DC coverage value additional DC contributions less than high-income workers. The results suggest that low-income workers are willing to accept a smaller wage reduction than high-income workers in exchange for an additional dollar of employer contributions.

These results imply that both low- and high-income workers benefit from employer DC contributions. High-income workers benefit because they can save more in a tax-advantaged form. Even though their total compensation is unchanged, the increased access to tax-free benefits provides them with more value than an equal amount of wages. Low-income workers benefit because their total compensation rises. The tax provisions may not benefit them much, or at all, directly, but they gain indirectly from the increase in total compensation.

Conclusions

This paper has examined the possibility that employer contributions to defined contribution pension plans may have different effects on the total compensation of workers from low-income and high-income families. Economists frequently assume that employees "pay for" employer-provided fringe benefits, including contributions to qualified retirement plans, in the form of reduced wages. But they often assume that contributions displace wages dollar-for-dollar for all employees. For example, studies of the distributional effect of tax incentives for retirement saving estimate the benefit of these incentives as the present value of increased lifetime income from additional amounts invested in tax-qualified retirement saving plans. These studies value the tax benefit under the assumption that total pretax compensation is unchanged. Our results challenge these assumptions.

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[15] These slopes are estimated at the means of the sample. For male workers in the sample, 58.5 percent are offered a DC plan and 24.4 percent a DB plan (Appendix Table A1a). Among female workers, 55.4 percent have a DC offer and 21.6 percent a DB offer (Appendix Table A1b).

[16] Mean values and estimated slopes for all model variables are included in Appendix Table A2a and A2b.

Qualified retirement plans may affect the distribution of pretax compensation, however, because low-income employees receive little direct benefit from this form of compensation. The difference between low-income and high-income employees comes from three sources. First, low-income employees in the 0 or 15 percent income tax rate bracket gain very little from the tax-free accrual of income in qualified plans, compared with high-income employees in the 25 to 35 percent income tax rate brackets. Second, the exemption of employer contributions from payroll taxes often provides relatively less benefit to low-income than high-income employees because low-income employees receive relatively higher returns from payroll taxes in the form of additions to their Social Security retirement benefits. Third, low-income employees are more likely than high-income employees to prefer consumption to meet current needs than additional saving and so on average place a lower subjective value than high-income employees on compensation in the form of contributions to savings plans that are costly for them to access.

For these reasons, high-income employees are likely to value employer contributions to retirement plans more than low-income employees. Because of non-discrimination rules, employers must induce participation of low-income employees in order to provide qualified benefits to high-income employees. Therefore, employers who wish to contribute to plans in order to attract high-income employees may be unable to reduce money wages to low-income workers in exchange for compensation in the form of retirement plan contributions.

Econometric efforts to estimate how much fringe benefits, such as health insurance and pension contributions, substitute for wages seek to explain money wages as a function of worker attributes and job characteristics. These studies often find a positive correlation between wages and fringe benefits, in part because of the difficulty of controlling for worker quality. The failure to identify the hypothesized "compensating differentials" may reflect a correlation between unmeasured worker quality and wages, which introduces a spurious correlation between wages and benefits because better workers are able to command more of both than are less able workers.

The data file used in this paper enables us to make a better adjustment for worker quality than could be obtained by looking at demographic characteristics of workers alone. We use an exact match file of the *Survey of Income and Program Participation* (SIPP) with the Social Security's Detailed Earnings Records (DER) to estimate the relationship between employer contributions to DC plans and wages for newly hired employees. The use of the DER enables us to supplement demographic data on the SIPP with data on workers' earnings histories to provide a better way of adjusting for worker quality.

In spite of these adjustments, we find that availability of pension coverage (either DC, DB, or CB plan) and health insurance coverage is still positively correlated with earnings, holding other worker and job characteristics fixed. This suggests the labor market may be segmented between better employers that offer both higher wages and fringe benefits and low-wage employers not offering benefits. But, within the group of employers offering DC plan

coverage, we do find that higher employer contribution rates substitute for cash wages. And, more strikingly, we find evidence that additional employer contributions to DC plans reduce money wages much less for low-income than for high-income employees. These results suggest that the tax preferences for 401(k) plans benefit both high- and low-income workers; the former because they benefit directly from the tax benefits for retirement saving and the latter because employer contributions raise their total pretax compensation.

These results are preliminary and more research needs to be done. They do suggest, however, that tax-advantaged fringe benefits that must be supplied on a fairly uniform and non-discriminatory basis to workers could induce employers to raise total compensation of low-income workers so that high-income workers can gain access to the tax preference.

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Table 1a. Parameter Estimates of the Natural Logarithm of Earnings Relative to the Average Wage (plus .25 offset) among Male Workers on the Current Job for One to Five Years

	ALL			Low Family Income			High Family Income		
	Parameter Estimate	Standard Error		Parameter Estimate	Standard Error		Parameter Estimate	Standard Error	
Intercept	0.6218	0.0392	***	0.4589	0.0530	***	0.9044	0.0893	***
Maximum(0, age-35)	-0.0041	0.0012	***	-0.0025	0.0017		-0.0082	0.0022	***
Maximum(0, age-55)	-0.0288	0.0033	***	-0.0289	0.0049	***	-0.0175	0.0055	***
High school graduate	0.0363	0.0198	*	0.0056	0.0231		0.0921	0.0582	
Some college	0.0600	0.0195	***	0.0322	0.0233		0.0911	0.0568	
Bachelor degree	0.1545	0.0210	***	0.0500	0.0283	*	0.1910	0.0574	***
Graduate degree	0.2112	0.0229	***	0.1235	0.0356	***	0.2575	0.0582	***
Black	-0.0596	0.0146	***	-0.0546	0.0187	***	-0.0668	0.0302	**
Asian	0.0366	0.0228		0.0012	0.0380		0.0078	0.0338	
Married	0.0372	0.0105	***	0.0418	0.0140	***	-0.0037	0.0233	
Number of kids<18 (cap=3)	0.0135	0.0039	***	0.0047	0.0057		0.0224	0.0065	***
Poor health	-0.1063	0.0380	***	-0.0582	0.0437		-0.1942	0.1031	*
Fair health	-0.0557	0.0178	***	-0.0644	0.0227	***	-0.0125	0.0375	
Good health	-0.0254	0.0102	**	-0.0268	0.0146	*	-0.0129	0.0178	
Have condition that limits	-0.2135	0.0169	***	-0.2357	0.0216	***	-0.2009	0.0343	***
Have DC offer dummy	0.0669	0.0122	***	0.0883	0.0271	***	0.0676	0.0242	***
Have DB plan dummy	0.0479	0.0162	***	0.1083	0.0517	**	0.0071	0.0300	
Have CB plan dummy	0.0739	0.0373	**	-0.1190	0.1335		0.0551	0.0625	
DC offer * family income	0.0726	0.0037	***	0.0723	0.0273	***	0.0552	0.0049	***
DB plan * family income	0.0183	0.0053	***	-0.0368	0.0522		0.0212	0.0072	***
CB plan * family income	0.0107	0.0117		0.2023	0.1260		0.0116	0.0152	
Covered by union contract	0.0502	0.0139	***	0.0804	0.0227	***	0.0017	0.0223	
Employer/union pays all health insurance	0.0045	0.0127		0.0232	0.0208		-0.0154	0.0199	
No employer provided health insurance	-0.1896	0.0106	***	-0.1958	0.0157	***	-0.1853	0.0176	***
Current job tenure	0.0172	0.0031	***	0.0146	0.0047	***	0.0276	0.0052	***
Maximum(0, work years - 5)	-0.0051	0.0024	**	-0.0048	0.0033		-0.0089	0.0045	**
Maximum(0, work years - 15)	0.0054	0.0037		0.0076	0.0051		0.0110	0.0066	*
Maximum(0, work years - 25)	-0.0033	0.0027		-0.0078	0.0041	*	-0.0022	0.0043	
Work t-1	-0.2238	0.0226	***	-0.1229	0.0292	***	-0.2985	0.0467	***
Work t-2	-0.1182	0.0259	***	-0.1340	0.0325	***	-0.1054	0.0569	*
Work t-3	-0.0701	0.0277	**	-0.0880	0.0354	**	-0.0686	0.0618	
Work t-4	-0.1108	0.0284	***	-0.0690	0.0367	*	-0.1673	0.0581	***
Work t-5	-0.0361	0.0265		-0.0126	0.0344		-0.0945	0.0519	*
Log(earning t-1 +.25)	0.3145	0.0117	***	0.2770	0.0181	***	0.3375	0.0183	***
Log(earning t-2 +.25)	0.0548	0.0151	***	0.0263	0.0221		0.0623	0.0253	**
Log(earning t-3 +.25)	0.0801	0.0158	***	0.0800	0.0237	***	0.0657	0.0262	**

Table 1a. Parameter Estimates of the Natural Logarithm of Earnings Relative to the Average Wage (plus .25 offset) among Male Workers on the Current Job for One to Five Years

	ALL			Low Family Income			High Family Income		
	Parameter Estimate	Standard Error		Parameter Estimate	Standard Error		Parameter Estimate	Standard Error	
Log(earning t-4 +.25)	0.0754	0.0168	***	0.0497	0.0256	*	0.0843	0.0270	***
Log(earning t-5 +.25)	0.0292	0.0139	**	0.0562	0.0216	***	0.0193	0.0215	
DC in prior job	-0.0660	0.0101	***	-0.0475	0.0150	***	-0.0856	0.0175	***
DB in prior job	-0.0116	0.0136		-0.0238	0.0241		-0.0034	0.0192	
Adjusted R-Square	0.6454			0.4654			0.6118		
N	9,215			3,861			3,548		

Source: Authors' calculations from the 2004 and 2008 SIPP data matched to SER and DER earnings data.

Notes: Sample includes workers in the pension topical module year with no more than five years on the current job and with a prior job. Low family income is based is based on family income in the bottom two family income quintiles (<1.48 times average wage 2004 panel, <1.32 times average wage in 2008). High family income is based is based on family income in the top two family income quintiles (>2.09 times average wage 2004 panel, >1.93 times average wage in 2008). T references the year the current job began. Earnings are relative to the annual economy-wide average wage.

*** significant at 1% level, ** significant at 5% level, * significant at 10% level.

Table 1b. Parameter Estimates of the Natural Logarithm of Earnings Relative to the Average Wage (plus .25 offset) among Female Workers on the Current Job for One to Five Years

	ALL			Low Family Income			High Family Income		
	Parameter Estimate	Standard Error		Parameter Estimate	Standard Error		Parameter Estimate	Standard Error	
Intercept	0.3318	0.0476	***	0.1881	0.0585	***	0.3859	0.1199	***
Maximum(0, age-35)	-0.0063	0.0018	***	-0.0037	0.0023		-0.0118	0.0036	***
Maximum(0, age-45)	0.0049	0.0041		0.0003	0.0054		0.0151	0.0081	*
Maximum(0, age-50)	-0.0113	0.0040	***	-0.0045	0.0052		-0.0232	0.0077	***
High school graduate	0.0317	0.0185	*	0.0369	0.0198	*	0.0744	0.0727	
Some college	0.0752	0.0181	***	0.0528	0.0196	***	0.1443	0.0710	**
Bachelor degree	0.1630	0.0196	***	0.1181	0.0231	***	0.2466	0.0716	***
Graduate degree	0.2539	0.0219	***	0.2015	0.0303	***	0.3199	0.0727	***
Black	-0.0163	0.0115		0.0029	0.0132		-0.0199	0.0288	
Asian	0.0476	0.0227	**	0.0263	0.0310		0.0766	0.0410	*
Immigrant	0.0682	0.0148	***	0.0885	0.0184	***	0.0692	0.0305	**
Divorced	0.0555	0.0102	***	0.0570	0.0117	***	0.1070	0.0295	***
Youngest<6	-0.0869	0.0158	***	-0.0604	0.0221	***	-0.1030	0.0289	***
6<=youngest<12	-0.0337	0.0135	**	-0.0185	0.0178		-0.0272	0.0259	
Number of kids<18	-0.0006	0.0049		-0.0014	0.0064		-0.0114	0.0095	
Poor health	-0.1367	0.0337	***	-0.1114	0.0365	***	-0.2314	0.1168	**
Fair health	-0.0315	0.0154	**	-0.0268	0.0176		-0.0184	0.0394	
Good health	-0.0183	0.0089	**	-0.0100	0.0113		-0.0230	0.0182	
Have a condition that limits work	-0.1241	0.0147	***	-0.1133	0.0165	***	-0.1683	0.0408	***
Have DC offer dummy	0.0856	0.0107	***	0.0639	0.0207	***	0.1188	0.0247	***
Have DB plan dummy	0.0604	0.0149	***	0.0083	0.0350		0.0901	0.0325	***
Have CB plan dummy	0.0231	0.0316		0.1564	0.0840	*	-0.0196	0.0641	
DC offer * family income	0.0611	0.0034	***	0.1198	0.0220	***	0.0358	0.0052	***
DB plan * family income	0.0210	0.0056	***	0.0655	0.0364	*	0.0049	0.0080	
CB plan *family income	0.0260	0.0099	***	-0.1395	0.0909		0.0337	0.0141	**
Covered by union contract	0.0187	0.0138		0.0402	0.0192	**	-0.0202	0.0252	
Employer/union pays all health insurance cost	0.0189	0.0130		0.0095	0.0184		0.0379	0.0237	
Employer/union pays no health insurance cost	-0.1088	0.0273	***	-0.1223	0.0321	***	-0.0970	0.0581	*
No employer provided health insurance	-0.2174	0.0094	***	-0.2257	0.0127	***	-0.2025	0.0175	***
Current job tenure	0.0135	0.0028	***	0.0060	0.0037		0.0194	0.0054	***
Maximum(0, work years - 0)	-0.0228	0.0101	**	-0.0237	0.0119	**	0.0021	0.0234	
Maximum(0, work years - 5)	0.0108	0.0137		0.0229	0.0159		-0.0392	0.0317	
Maximum(0, work years - 10)	0.0145	0.0057	**	0.0010	0.0068		0.0421	0.0125	***
Maximum(0, work years - 25)	-0.0063	0.0023	***	-0.0042	0.0029		-0.0068	0.0046	
Log(earning t-1 +.25)	-0.1064	0.0123	***	0.2467	0.0168	***	0.3425	0.0228	***

Table 1b. Parameter Estimates of the Natural Logarithm of Earnings Relative to the Average Wage (plus .25 offset) among Female Workers on the Current Job for One to Five Years

	ALL			Low Family Income			High Family Income		
	Parameter Estimate	Standard Error		Parameter Estimate	Standard Error		Parameter Estimate	Standard Error	
Log(earning t-2 +.25)	-0.0558	0.0164	***	0.0632	0.0215	***	0.0467	0.0310	
Log(earning t-3 +.25)	-0.0231	0.0173	*	0.0262	0.0225		0.0566	0.0327	*
Log(earning t-4 +.25)	-0.0193	0.0174		0.0135	0.0228		0.0086	0.0327	
Log(earning t-5 +.25)	-0.0383	0.0139	***	0.0799	0.0190	***	0.0923	0.0252	***
Work t-1	0.3042	0.0166	***	-0.0833	0.0209	***	-0.0982	0.0348	***
Work t-2	0.0597	0.0185	***	-0.0448	0.0227	**	-0.0516	0.0389	
Work t-3	0.0336	0.0193		-0.0253	0.0237		-0.0430	0.0409	
Work t-4	0.0182	0.0191		-0.0065	0.0240		-0.0189	0.0397	
Work t-5	0.0811	0.0174	**	-0.0389	0.0218	*	-0.0314	0.0362	
DC in prior job	-0.0285	0.0095	***	-0.0197	0.0126		-0.0712	0.0185	***
DB in prior job	-0.0308	0.0134	**	-0.0404	0.0208	*	-0.0304	0.0219	
Adjusted R-Square	0.617			0.493			0.619		
Unweighted N	9,803			4,694			3,243		

Source: Authors' calculations from the 2004 and 2008 SIPP data matched to SER and DER earnings data.
Notes: Sample includes workers in the pension topical module year with no more than five years on the current job and with a prior job. Low family income is based is based on family income in the bottom two family income quintiles (<1.48 times average wage 2004 panel, <1.32 times average wage in 2008). High family income is based is based on family income in the top two family income quintiles (>2.09 times average wage 2004 panel, >1.93 times average wage in 2008). T references the year the current job began. Earnings are relative to the annual economy-wide average wage. *** significant at 1% level, ** significant at 5% level, * significant at 10% level.

Table 2a. Parameter Estimates of the Natural Logarithm of Earnings Relative to the Average Wage (plus .25 offset) among Male Workers on the Current Job for One to Five Years with a DC Plan Offer

	ALL			Low Family Income			High Family Income		
	Parameter Estimate	Standard Error		Parameter Estimate	Standard Error		Parameter Estimate	Standard Error	
Intercept	0.9183	0.0503	***	0.6042	0.0732	***	1.4283	0.0986	***
Maximum(0, age-35)	-0.0080	0.0014	***	-0.0057	0.0022	**	-0.0081	0.0021	***
Maximum(0, age-55)	-0.0137	0.0037	***	-0.0174	0.0063	***	-0.0061	0.0053	
High school graduate	0.0232	0.0276		-0.0094	0.0340		0.0286	0.0634	
Some college	0.0559	0.0269	**	0.0050	0.0337		0.0421	0.0619	
Bachelor degree	0.1207	0.0279	***	0.0119	0.0375		0.0932	0.0622	
Graduate degree	0.2089	0.0292	***	0.0276	0.0448		0.1899	0.0630	***
Black	-0.0246	0.0167		-0.0076	0.0231		-0.0339	0.0295	
Asian	-0.0147	0.0243		-0.0404	0.0522		-0.0853	0.0307	***
Married	0.0449	0.0116	***	0.0152	0.0170		-0.0146	0.0221	
Number of kids<18 (cap=3)	0.0133	0.0042	***	0.0122	0.0070	*	0.0161	0.0061	***
Poor health	-0.0222	0.0511		0.0145	0.0610		0.0094	0.1090	
Fair health	-0.0220	0.0210		-0.0042	0.0295		-0.0035	0.0364	
Good health	-0.0178	0.0110		-0.0059	0.0174		-0.0161	0.0169	
Have condition that limits	-0.1190	0.0219	***	-0.1487	0.0313	***	-0.1192	0.0366	***
Have DB plan dummy	0.0325	0.0104	***	0.0216	0.0202		0.0218	0.0139	
Have CB plan dummy	0.0691	0.0198	***	0.0707	0.0404	*	0.0491	0.0256	*
Covered by union contract	0.0240	0.0142	*	0.0736	0.0245	***	-0.0366	0.0213	*
Employer/union pays all health insurance	-0.0007	0.0132		-0.0238	0.0226		-0.0075	0.0190	
No employer provided health insurance	-0.1229	0.0121	***	-0.1565	0.0197	***	-0.1245	0.0173	***
Current job tenure	0.0150	0.0034	***	0.0107	0.0058	*	0.0171	0.0049	***
Employer contribution/worker earnings	-0.4129	0.0694	***	-0.3289	0.1059	***	-0.4491	0.1180	***
Employee contribution/average wage	1.4021	0.0468	***	2.4571	0.1340	***	1.1017	0.0548	***
Employer contribution depends entirely on own contribution	0.0856	0.0115	***	0.0547	0.0207	***	0.0714	0.0162	***
Employer contribution depends partly on own contribution	0.0555	0.0152	***	0.0620	0.0286	**	0.0333	0.0204	
Employer contribution depends not at all on own contribution	0.0825	0.0177	***	0.0257	0.0348		0.0728	0.0235	***
Maximum(0, work years - 5)	-0.0048	0.0029		-0.0014	0.0046		-0.0128	0.0044	***
Maximum(0, work years - 15)	0.0050	0.0042		0.0025	0.0068		0.0129	0.0063	**
Maximum(0, work years - 25)	0.0000	0.0029		-0.0014	0.0050		-0.0021	0.0040	
Work t-1	-0.2579	0.0294	***	-0.1302	0.0412	***	-0.3565	0.0507	***
Work t-2	-0.1572	0.0339	***	-0.1880	0.0458	***	-0.0496	0.0611	
Work t-3	-0.0746	0.0355	**	-0.0602	0.0482		-0.2573	0.0695	***
Work t-4	-0.0628	0.0350	*	-0.0650	0.0506		-0.0138	0.0613	

Table 2a. Parameter Estimates of the Natural Logarithm of Earnings Relative to the Average Wage (plus .25 offset) among Male Workers on the Current Job for One to Five Years with a DC Plan Offer

	ALL			Low Family Income			High Family Income		
	Parameter Estimate	Standard Error		Parameter Estimate	Standard Error		Parameter Estimate	Standard Error	
Work t-5	-0.1872	0.0331	***	-0.0548	0.0494		-0.3077	0.0523	***
Log(earning t-1 +.25)	0.2646	0.0131	***	0.2412	0.0231	***	0.2566	0.0178	***
Log(earning t-2 +.25)	0.1081	0.0170	***	0.0615	0.0280	**	0.1248	0.0244	***
Log(earning t-3 +.25)	0.0715	0.0177	***	0.0248	0.0297		0.0781	0.0257	***
Log(earning t-4 +.25)	0.0416	0.0188	**	0.0386	0.0324		0.0353	0.0264	
Log(earning t-5 +.25)	0.0788	0.0153	***	0.0737	0.0262	***	0.0775	0.0211	***
DC in prior job	-0.0908	0.0110	***	-0.0764	0.0173	***	-0.1061	0.0174	***
DB in prior job	-0.0159	0.0133		-0.0374	0.0268		-0.0090	0.0172	
Adjusted R-Square	0.703			0.549			0.676		
N	5,386			1,690			2,613		

Source: Authors' calculations from the 2004 and 2008 SIPP data matched to SER and DER earnings data.
Notes: Sample includes workers with a DC plan offer in the pension topical module year and no more than five years on the current job and with a prior job. Low family income is based is based on family income in the bottom two family income quintiles (<1.48 times average wage 2004 panel, <1.32 times average wage in 2008). High family income is based is based on family income in the top two family income quintiles (>2.09 times average wage 2004 panel, >1.93 times average wage in 2008). T references the year the current job began. Earnings are relative to the annual economy-wide average wage.
*** significant at 1% level, ** significant at 5% level, * significant at 10% level.

Table 2b. Parameter Estimates of the Natural Logarithm of Earnings Relative to the Average Wage (plus .25 offset) among Female Workers on the Current Job for One to Five Years with a DC Plan Offer

	ALL			Low Family Income			High Family Income		
	Parameter Estimate	Standard Error		Parameter Estimate	Standard Error		Parameter Estimate	Standard Error	
Intercept	0.3080	0.0470	***	0.2578	0.0935	***	0.3725	0.1442	***
Maximum(0, age-35)	-0.0062	0.0018	***	-0.0022	0.0031		-0.0111	0.0040	***
Maximum(0, age-45)	0.0065	0.0041		-0.0071	0.0069		0.0106	0.0088	
Maximum(0, age-50)	-0.0148	0.0039	***	0.0023	0.0068		-0.0132	0.0084	
High school graduate	0.0493	0.0183	***	0.0622	0.0323	*	0.1108	0.0996	
Some college	0.0970	0.0179	***	0.0886	0.0319	***	0.1878	0.0980	*
Bachelor degree	0.1771	0.0193	***	0.1534	0.0348	***	0.2838	0.0984	***
Graduate degree	0.2600	0.0215	***	0.2229	0.0406	***	0.3378	0.0989	***
Black	-0.0234	0.0113	**	0.0004	0.0170		-0.0300	0.0324	
Asian	0.0208	0.0224		0.0045	0.0450		0.0133	0.0430	
Immigrant	0.0612	0.0146	***	0.0750	0.0264	***	0.0381	0.0338	
Divorced	0.0380	0.0100	***	0.0360	0.0146	**	0.1270	0.0303	***
Youngest<6	-0.0877	0.0156	***	-0.0655	0.0295	**	-0.0997	0.0302	***
6<=youngest<12	-0.0279	0.0133	**	-0.0142	0.0235		-0.0229	0.0276	
Number of kids<18	0.0053	0.0049		-0.0040	0.0089		0.0080	0.0104	
Poor health	-0.1440	0.0333	***	-0.1100	0.0558	**	-0.2024	0.1630	
Fair health	-0.0392	0.0152	***	-0.0229	0.0253		-0.0301	0.0458	
Good health	-0.0189	0.0088	**	0.0112	0.0144		-0.0410	0.0197	**
Have a condition the limits work	-0.1286	0.0145	***	-0.0959	0.0232	***	-0.0744	0.0498	
Have DB plan dummy	0.0702	0.0100	***	0.0220	0.0174		0.0500	0.0177	***
Have CB plan dummy	0.0900	0.0215	***	-0.0249	0.0331		0.0652	0.0323	**
Employer contribution/worker earnings	-0.4186	0.0705	***	-0.1708	0.0946	*	-0.8185	0.1346	***
Employee contribution/average wage	1.8010	0.0563	***	1.8604	0.1229	***	1.3707	0.0770	***
Employer contribution depends entirely on own contribution	0.1209	0.0120	***	0.0659	0.0181	***	0.1080	0.0199	***
Employer contribution depends partly on own contribution	0.1176	0.0165	***	0.0658	0.0264	**	0.1086	0.0264	***
Employer contribution depends not at all on own contribution	0.1327	0.0182	***	0.1025	0.0282	***	0.0789	0.0288	***
Covered by union contract	0.0430	0.0136	***	0.0193	0.0224		-0.0170	0.0254	
Employer/union pays all health insurance cost	0.0256	0.0128	**	0.0086	0.0209		0.0518	0.0240	**
Employer/union pays no health insurance cost	-0.1039	0.0270	***	-0.0880	0.0347	**	-0.1023	0.0657	
No employer provided health insurance	-0.2162	0.0091	***	-0.2077	0.0160	***	-0.1237	0.0183	***
Current job tenure	0.0102	0.0028	***	0.0051	0.0049		0.0113	0.0058	*
Maximum(0, work years - 0)	-0.0261	0.0099	***	0.0006	0.0196		0.0096	0.0257	
Maximum(0, work years - 5)	0.0185	0.0135		-0.0026	0.0255		-0.0427	0.0354	

Table 2b. Parameter Estimates of the Natural Logarithm of Earnings Relative to the Average Wage (plus .25 offset) among Female Workers on the Current Job for One to Five Years with a DC Plan Offer

	ALL			Low Family Income			High Family Income		
	Parameter Estimate	Standard Error		Parameter Estimate	Standard Error		Parameter Estimate	Standard Error	
Maximum(0, work years - 10)	0.0101	0.0056	*	0.0000	0.0100		0.0372	0.0144	***
Maximum(0, work years - 25)	-0.0069	0.0023	***	0.0019	0.0039		-0.0053	0.0050	
Work t-1	-0.0880	0.0164	***	-0.0671	0.0314	**	-0.0495	0.0425	
Work t-2	-0.0462	0.0182	**	-0.0599	0.0333	*	-0.1025	0.0451	**
Work t-3	-0.0160	0.0191		-0.0944	0.0348	***	-0.0887	0.0472	*
Work t-4	-0.0240	0.0189		0.0084	0.0348		0.0326	0.0462	
Work t-5	-0.0304	0.0172	*	-0.0801	0.0305	***	-0.0341	0.0423	
Log(earning t-1 +.25)	0.2838	0.0122	***	0.2129	0.0219	***	0.2506	0.0252	***
Log(earning t-2 +.25)	0.0526	0.0161	***	0.1312	0.0293	***	0.0844	0.0335	**
Log(earning t-3 +.25)	0.0378	0.0170	**	0.0053	0.0290		0.0641	0.0356	*
Log(earning t-4 +.25)	0.0151	0.0172		0.0250	0.0297		-0.0096	0.0353	
Log(earning t-5 +.25)	0.0665	0.0137	***	0.0761	0.0245	***	0.0741	0.0279	***
DC in prior job	-0.0234	0.0092	**	-0.0388	0.0152	**	-0.0630	0.0202	***
DB in prior job	-0.0206	0.0132		-0.0286	0.0228		-0.0165	0.0214	
Adjusted R-Square	0.627			0.556			0.640		
Unweighted N	5,428			2,141			2,176		

Source: Authors' calculations from the 2004 and 2008 SIPP data matched to SER and DER earnings data.
Notes: Sample includes workers with a DC plan offer in the pension topical module year and no more than five years on the current job and with a prior job. Low family income is based is based on family income in the bottom two family income quintiles (<1.48 times average wage 2004 panel, <1.32 times average wage in 2008). High family income is based is based on family income in the top two family income quintiles (>2.09 times average wage 2004 panel, >1.93 times average wage in 2008). T references the year the current job began. Earnings are relative to the annual economy-wide average wage.

*** significant at 1% level, ** significant at 5% level, * significant at 10% level.

Table 3. Summary Results of Slopes and the Difference between Low- and High-Income Workers

	Estimated Slope			
	All Earners	**Low Family Income**	**High Family Income**	**Low Minus High**
		All Workers		
		Male		
Have DC offer dummy	0.0702	0.0585	0.1148	-0.0564
Have DB Plan dummy	0.0503	0.0717	0.0121	0.0596
Have DC by family income	0.0762	0.0478	0.0939	-0.0460
Have DB by family income	0.0192	-0.0244	0.0360	-0.0604
		Female		
Have DC offer dummy	0.0544	0.0296	0.1141	-0.0846
Have DB plan dummy	0.0384	0.0038	0.0865	-0.0827
Have DC by family income	0.0389	0.0555	0.0344	0.0211
Have DB by family income	0.0134	0.0303	0.0047	0.0257
		Workers Offered a DC Plan		
		Male		
Have DB plan dummy	0.0454	0.0187	0.0436	-0.0248
Have CB plan dummy	0.0965	0.0613	0.0980	-0.0367
Employer contribution/worker earnings	-0.5769	-0.2855	-0.8964	0.6109
		Female		
Have DB Plan dummy	0.0607	0.0138	0.0603	-0.0465
Have CB plan dummy	0.0779	-0.0156	0.0787	-0.0943
Employer contribution/worker earnings	-0.3623	-0.1071	-0.9882	0.8811

Source: Authors' calculations from the 2004 and 2008 SIPP data matched to SER and DER earnings data.
Notes: Top panel includes workers in the pension topical module year and no more than five years on the current job and with a prior job. Bottom panel includes workers with a DC offer. Low family income is based is based on family income in the bottom two family income quintiles (<1.48 times average wage 2004 panel, <1.32 times average wage in 2008). High family income is based is based on family income in the top two family income quintiles (>2.09 times average wage 2004 panel, >1.93 times average wage in 2008).

Appendix: Notation in Formulas

F is the value of fringe benefits received

t_b = the employer's marginal payroll tax rate on the employee's earnings,

t_c is the tax rate applied to income received in year n

t_m is the taxpayer's marginal tax rate of earnings

t_p = the employee's marginal payroll tax rate,

t_r = the individual's marginal tax rate on invested funds held outside of qualified plans

t_w = the marginal income tax rate on the current year's wages

r= the rate of return on investment,

s = the present value of incremental Social Security benefits associated with an additional dollar of cash wages,

S is the employer contribution

n is the number of years until the proceeds of the savings are consumed.

u(c) represents the subjective incremental value to the employee of receiving a dollar of current wages in place of a dollar of retirement plan assets

V(W) = value of cash wages

$v(t_r)$ = the present value of being able to accrue an additional dollar of savings within instead of outside a 401(k) plan

Table A1a. Parameter Estimates, Mean Values, and Estimated Slope in Earnings Relative to the Average Wage among Male Workers on a Current Job for One to Five Years

	ALL			Low Income			High Income		
	Parameter			Parameter			Parameter		
	Estimate	Mean	dy/dx	Estimate	Mean	dy/dx	Estimate	Mean	dy/dx
Mean Earnings/Average Wage		1.050			0.662			1.699	
Intercept	0.6218	1.000		0.4589	1.000		0.9044	1.000	
Maximum(0, age-35)	-0.0041	10.918	-0.004	-0.0025	10.874	-0.002	-0.0082	11.105	-0.014
Maximum(0, age-55)	-0.0288	0.853	-0.030	-0.0289	0.873	-0.019	-0.0175	0.803	-0.030
High school graduate	0.0363	0.246	0.038	0.0056	0.338	0.004	0.0921	0.141	0.156
Some college	0.0600	0.365	0.063	0.0322	0.392	0.021	0.0911	0.306	0.155
Bachelor degree	0.1545	0.211	0.162	0.0500	0.118	0.033	0.1910	0.319	0.325
Graduate degree	0.2112	0.121	0.222	0.1235	0.051	0.082	0.2575	0.218	0.437
Black	-0.0596	0.096	-0.063	-0.0546	0.136	-0.036	-0.0668	0.057	-0.114
Asian	0.0366	0.041	0.038	0.0012	0.032	0.001	0.0078	0.056	0.013
Married	0.0372	0.742	0.039	0.0418	0.588	0.028	-0.0037	0.891	-0.006
Number of kids<18 (cap=3)	0.0135	1.349	0.014	0.0047	1.285	0.003	0.0224	1.414	0.038
Poor health	-0.1063	0.013	-0.112	-0.0582	0.023	-0.039	-0.1942	0.005	-0.330
Fair health	-0.0557	0.069	-0.059	-0.0644	0.102	-0.043	-0.0125	0.037	-0.021
Good health	-0.0254	0.251	-0.027	-0.0268	0.300	-0.018	-0.0129	0.197	-0.022
Have condition that limits	-0.2135	0.079	-0.224	-0.2357	0.116	-0.156	-0.2009	0.046	-0.341
Have DC offer dummy	0.0669	0.585	0.070	0.0883	0.438	0.058	0.0676	0.736	0.115
Have DB plan dummy	0.0479	0.244	0.050	0.1083	0.164	0.072	0.0071	0.317	0.012
Have CB plan dummy	0.0739	0.039	0.078	-0.1190	0.022	-0.079	0.0551	0.056	0.094
DC Offer * family income	0.0726	1.381	0.076	0.0723	0.385	0.048	0.0552	2.655	0.094
DB plan * family income	0.0183	0.589	0.019	-0.0368	0.154	-0.024	0.0212	1.132	0.036
CB plan * Family income	0.0107	0.101	0.011	0.2023	0.022	0.134	0.0116	0.203	0.020
Covered by union contract	0.0502	0.113	0.053	0.0804	0.094	0.053	0.0017	0.119	0.003
Employer/union pays all health insurance	0.0045	0.141	0.005	0.0232	0.120	0.015	-0.0154	0.154	-0.026
No employer provided health insurance	-0.1896	0.337	-0.199	-0.1958	0.444	-0.130	-0.1853	0.251	-0.315
Current job tenure	0.0172	2.661	0.018	0.0146	2.586	0.010	0.0276	2.722	0.047
Maximum(0, work years - 5)	-0.0051	18.174	-0.005	-0.0048	17.374	-0.003	-0.0089	18.986	-0.015
Maximum(0, work years - 15)	0.0054	9.150	0.006	0.0076	8.534	0.005	0.0110	9.785	0.019
Maximum(0, work years - 25)	-0.0033	3.295	-0.003	-0.0078	3.043	-0.005	-0.0022	3.490	-0.004
Work t-1	-0.2238	0.930	-0.235	-0.1229	0.897	-0.081	-0.2985	0.960	-0.507
Work t-2	-0.1182	0.932	-0.124	-0.1340	0.895	-0.089	-0.1054	0.966	-0.179
Work t-3	-0.0701	0.934	-0.074	-0.0880	0.894	-0.058	-0.0686	0.970	-0.117
Work t-4	-0.1108	0.932	-0.116	-0.0690	0.895	-0.046	-0.1673	0.966	-0.284
Work t-5	-0.0361	0.931	-0.038	-0.0126	0.898	-0.008	-0.0945	0.960	-0.160
Log(earning t-1 +.25)	0.3145	0.097	0.388	0.2770	-0.237	0.340	0.3375	0.478	0.421
Log(earning t-2 +.25)	0.0548	0.142	0.064	0.0263	-0.194	0.030	0.0623	0.523	0.074

Log(earning t-3 +.25)	0.0801	0.149	0.092	0.0800	-0.172	0.090	0.0657	0.515	0.078
Log(earning t-4 +.25)	0.0754	0.147	0.087	0.0497	-0.161	0.055	0.0843	0.496	0.103
Log(earning t-5 +.25)	0.0292	0.137	0.034	0.0562	-0.158	0.062	0.0193	0.468	0.024
DC in prior job	-0.0660	0.534	-0.069	-0.0475	0.394	-0.031	-0.0856	0.687	-0.146
DB in prior job	-0.0116	0.114	-0.012	-0.0238	0.077	-0.016	-0.0034	0.159	-0.006
Adjusted R-Square	0.645			0.465			0.612		
N	9,215			3,861			3,548		

Source: Authors' calculations from the 2004 and 2008 SIPP data matched to SER and DER earnings data.

Notes: Sample includes workers in the pension topical module year with no more than five years on the current job and with a prior job. Low family income is based is based on family income in the bottom two family income quintiles (<1.48 times average wage 2004 panel, <1.32 times average wage in 2008). High family income is based is based on family income in the top two family income quintiles (>2.09 times average wage 2004 panel, >1.93 times average wage in 2008). T references the year the current job began. Earnings are relative to the annual economy-wide average wage.

Table A1b. Parameter Estimates, Mean Values, and Estimated Slope in Earnings Relative to the Average Wage among Female Workers on a Current Job for One to Five Years

	ALL			Low Family Income			High Family Income		
	Parameter			Parameter			Parameter		
	Estimate	Mean	dy/dx	Estimate	Mean	dy/dx	Estimate	Mean	dy/dx
Mean Earnings/Average Wage		0.636			0.463			0.961	
Intercept	0.3318	1.000		0.1881	1.000		0.3859	1.000	
Maximum(0, age-35)	-0.0063	10.807	-0.004	-0.0037	11.029	-0.002	-0.0118	10.371	-0.0113
Maximum(0, age-45)	0.0049	3.981	0.003	0.0003	4.242	0.000	0.0151	3.532	0.0145
Maximum(0, age-50)	-0.0113	1.970	-0.007	-0.0045	2.191	-0.002	-0.0232	1.604	-0.0223
High school graduate	0.0317	0.235	0.020	0.0369	0.300	0.017	0.0744	0.133	0.0715
Some college	0.0752	0.405	0.048	0.0528	0.431	0.024	0.1443	0.361	0.1387
Bachelor degree	0.1630	0.203	0.104	0.1181	0.133	0.055	0.2466	0.303	0.2369
Graduate degree	0.2539	0.102	0.162	0.2015	0.046	0.093	0.3199	0.192	0.3073
Black	-0.0163	0.131	-0.010	0.0029	0.185	0.001	-0.0199	0.070	-0.0191
Asian	0.0476	0.037	0.030	0.0263	0.032	0.012	0.0766	0.046	0.0736
Immigrant	0.0682	0.134	0.043	0.0885	0.151	0.041	0.0692	0.117	0.0664
Divorced	0.0555	0.179	0.035	0.0570	0.268	0.026	0.1070	0.068	0.1028
Youngest<6	-0.0869	0.131	-0.055	-0.0604	0.109	-0.028	-0.1030	0.163	-0.0989
6<=youngest<12	-0.0337	0.171	-0.021	-0.0185	0.167	-0.009	-0.0272	0.175	-0.0261
Number of kids<18	-0.0006	0.931	0.000	-0.0014	0.899	-0.001	-0.0114	1.004	-0.0109
Poor health	-0.1367	0.014	-0.087	-0.1114	0.021	-0.052	-0.2314	0.004	-0.2223
Fair health	-0.0315	0.078	-0.020	-0.0268	0.110	-0.012	-0.0184	0.039	-0.0177
Good health	-0.0183	0.275	-0.012	-0.0100	0.321	-0.005	-0.0230	0.212	-0.0221
Have a condition the limits work	-0.1241	0.088	-0.079	-0.1133	0.129	-0.052	-0.1683	0.036	-0.1617
Have DC offer dummy	0.0856	0.554	0.054	0.0639	0.456	0.030	0.1188	0.671	0.1141
Have DB plan dummy	0.0604	0.216	0.038	0.0083	0.153	0.004	0.0901	0.290	0.0865
Have CB plan dummy	0.0231	0.033	0.015	0.1564	0.024	0.072	-0.0196	0.044	-0.0188
DC offer * family income	0.0611	1.154	0.039	0.1198	0.381	0.055	0.0358	2.365	0.0344
DB plan * family income	0.0210	0.472	0.013	0.0655	0.135	0.030	0.0049	0.999	0.0047
CB plan * family income	0.0260	0.076	0.017	-0.1395	0.020	-0.065	0.0337	0.166	0.0323
Covered by union contract	0.0187	0.090	0.012	0.0402	0.079	0.019	-0.0202	0.103	-0.0194
Employer/union pays all health insurance cost	0.0189	0.111	0.012	0.0095	0.095	0.004	0.0379	0.124	0.0364
Employer/union pays no health insurance cost	-0.1088	0.021	-0.069	-0.1223	0.026	-0.057	-0.0970	0.016	-0.0932
No employer provided health insurance	-0.2174	0.477	-0.138	-0.2257	0.519	-0.105	-0.2025	0.447	-0.1945
Current job tenure	0.0135	2.652	0.009	0.0060	2.562	0.003	0.0194	2.763	0.0186
Maximum(0, work years - 0)	-0.0228	20.346	-0.015	-0.0237	19.702	-0.011	0.0021	21.004	0.0020
Maximum(0, work years - 5)	0.0108	15.449	0.007	0.0229	14.823	0.011	-0.0392	16.078	-0.0377
Maximum(0, work years - 10)	0.0145	10.834	0.009	0.0010	10.301	0.000	0.0421	11.345	0.0404
Maximum(0, work years - 25)	-0.0063	1.862	-0.004	-0.0042	1.839	-0.002	-0.0068	1.816	-0.0066
Work t-1	-0.1064	0.870	-0.068	-0.0833	0.862	-0.039	-0.0982	0.878	-0.0943
Work t-2	-0.0558	0.867	-0.036	-0.0448	0.852	-0.021	-0.0516	0.880	-0.0496
Work t-3	-0.0231	0.866	-0.015	-0.0253	0.854	-0.012	-0.0430	0.877	-0.0413

Work t-4	-0.0193	0.859	-0.012	-0.0065	0.854	-0.003	-0.0189	0.864	-0.0182
Work t-5	-0.0383	0.853	-0.024	-0.0389	0.839	-0.018	-0.0314	0.867	-0.0301
Log(earning t-1 +.25)	0.3042	-0.331	0.413	0.2467	-0.514	0.328	0.3425	-0.073	0.4844
Log(earning t-2 +.25)	0.0597	-0.292	0.076	0.0632	-0.469	0.078	0.0467	-0.051	0.0640
Log(earning t-3 +.25)	0.0336	-0.293	0.043	0.0262	-0.461	0.032	0.0566	-0.070	0.0796
Log(earning t-4 +.25)	0.0182	-0.306	0.024	0.0135	-0.460	0.016	0.0086	-0.096	0.0125
Log(earning t-5 +.25)	0.0811	-0.318	0.108	0.0799	-0.473	0.099	0.0923	-0.110	0.1372
DC in prior job	-0.0285	0.456	-0.018	-0.0197	0.358	-0.009	-0.0712	0.578	-0.0684
DB in prior job	-0.0308	0.093	-0.020	-0.0404	0.066	-0.019	-0.0304	0.132	-0.0292
Adjusted R-Squared	0.617			0.493			0.619		
Unweighted N	9,803			4,694			3,243		

Source: Authors' calculations from the 2004 and 2008 SIPP data matched to SER and DER earnings data.

Notes: Sample includes workers in the pension topical module year with no more than five years on the current job and with a prior job. Low family income is based is based on family income in the bottom two family income quintiles (<1.48 times average wage 2004 panel, <1.32 times average wage in 2008). High family income is based is based on family income in the top two family income quintiles (>2.09 times average wage 2004 panel, >1.93 times average wage in 2008). T references the year the current job began. Earnings are relative to the annual economy-wide average wage.

Table A2a. Parameter Estimates, Mean Values, and Estimated Slope in Earnings Relative to the Average Wage among Male Workers on a Current Job for One to Five Years with a DC Offer

	ALL			Low Family Income			High Family Income		
	Parameter			Parameter			Parameter		
	Estimate	Mean	dy/dx	Estimate	Mean	dy/dx	Estimate	Mean	dy/dx
Mean Earnings/Average Wage		1.397			0.868			1.996	
Intercept	0.9183	1.000		0.6042	1.000		1.4283	1.000	
Maximum(0, age-35)	-0.0080	10.564	-0.011	-0.0057	10.476	-0.005	-0.0081	10.837	-0.016
Maximum(0, age-55)	-0.0137	0.717	-0.019	-0.0174	0.734	-0.015	-0.0061	0.690	-0.012
High school graduate	0.0232	0.196	0.032	-0.0094	0.300	-0.008	0.0286	0.117	0.057
Some college	0.0559	0.361	0.078	0.0050	0.427	0.004	0.0421	0.285	0.084
Bachelor degree	0.1207	0.261	0.169	0.0119	0.149	0.010	0.0932	0.351	0.186
Graduate degree	0.2089	0.150	0.292	0.0276	0.063	0.024	0.1899	0.236	0.379
Black	-0.0246	0.082	-0.034	-0.0076	0.126	-0.007	-0.0339	0.052	-0.068
Asian	-0.0147	0.043	-0.021	-0.0404	0.024	-0.035	-0.0853	0.062	-0.170
Married	0.0449	0.766	0.063	0.0152	0.570	0.013	-0.0146	0.894	-0.029
Number of kids<18 (cap=3)	0.0133	1.322	0.019	0.0122	1.182	0.011	0.0161	1.417	0.032
Poor health	-0.0222	0.008	-0.031	0.0145	0.017	0.013	0.0094	0.000	0.019
Fair health	-0.0220	0.053	-0.031	-0.0042	0.081	-0.004	-0.0035	0.033	-0.007
Good health	-0.0178	0.237	-0.025	-0.0059	0.298	-0.005	-0.0161	0.189	-0.032
Have condition that limits	-0.1190	0.048	-0.166	-0.1487	0.070	-0.129	-0.1192	0.034	-0.238
Have DB plan dummy	0.0325	0.279	0.045	0.0216	0.193	0.019	0.0218	0.328	0.044
Have CB plan dummy	0.0691	0.056	0.097	0.0707	0.038	0.061	0.0491	0.068	0.098
Covered by union contract	0.0240	0.121	0.034	0.0736	0.117	0.064	-0.0366	0.109	-0.073
Employer/union pays all health insurance	-0.0007	0.141	-0.001	-0.0238	0.137	-0.021	-0.0075	0.136	-0.015
No employer provided health insurance	-0.1229	0.194	-0.172	-0.1565	0.231	-0.136	-0.1245	0.183	-0.249
Current job tenure	0.0150	2.743	0.021	0.0107	2.664	0.009	0.0171	2.770	0.034
Employer contribution/ worker earnings	-0.4129	0.030	-0.577	-0.3289	0.027	-0.286	-0.4491	0.031	-0.896
Employee contribution/ average wage	1.4021	0.098	1.959	2.4571	0.040	2.133	1.1017	0.150	2.199
Employer contribution depends entirely on own contribution	0.0856	0.269	0.120	0.0547	0.210	0.047	0.0714	0.308	0.143
Employer contribution depends partly on own contribution	0.0555	0.118	0.078	0.0620	0.085	0.054	0.0333	0.146	0.066
Employer contribution depends not at all on own contribution	0.0825	0.079	0.115	0.0257	0.053	0.022	0.0728	0.098	0.145
Maximum(0, work years - 5)	-0.0048	18.488	-0.007	-0.0014	17.907	-0.001	-0.0128	18.965	-0.026
Maximum(0, work years - 15)	0.0050	9.279	0.007	0.0025	8.843	0.002	0.0129	9.681	0.026
Maximum(0, work years - 25)	0.0000	3.233	0.000	-0.0014	3.063	-0.001	-0.0021	3.366	-0.004
Work t-1	-0.2579	0.958	-0.360	-0.1302	0.932	-0.113	-0.3565	0.974	-0.712
Work t-2	-0.1572	0.959	-0.220	-0.1880	0.929	-0.163	-0.0496	0.976	-0.099
Work t-3	-0.0746	0.960	-0.104	-0.0602	0.928	-0.052	-0.2573	0.980	-0.514

Table A2a. Parameter Estimates, Mean Values, and Estimated Slope in Earnings Relative to the Average Wage among Male Workers on a Current Job for One to Five Years with a DC Offer

	ALL			Low Family Income			High Family Income		
	Parameter			Parameter			Parameter		
	Estimate	Mean	dy/dx	Estimate	Mean	dy/dx	Estimate	Mean	dy/dx
Work t-4	-0.0628	0.957	-0.088	-0.0650	0.930	-0.056	-0.0138	0.974	-0.028
Work t-5	-0.1872	0.958	-0.262	-0.0548	0.940	-0.048	-0.3077	0.968	-0.614
Log(earning t-1 +.25)	0.2646	0.291	0.340	0.2412	-0.082	0.312	0.2566	0.587	0.331
Log(earning t-2 +.25)	0.1081	0.322	0.134	0.0615	-0.055	0.077	0.1248	0.621	0.155
Log(earning t-3 +.25)	0.0715	0.319	0.089	0.0248	-0.041	0.030	0.0781	0.610	0.098
Log(earning t-4 +.25)	0.0416	0.310	0.052	0.0386	-0.025	0.046	0.0353	0.580	0.046
Log(earning t-5 +.25)	0.0788	0.290	0.101	0.0737	-0.029	0.089	0.0775	0.546	0.105
DC in prior job	-0.0908	0.687	-0.127	-0.0764	0.551	-0.066	-0.1061	0.787	-0.212
DB in prior job	-0.0159	0.138	-0.022	-0.0374	0.091	-0.032	-0.0090	0.174	-0.018
Adjusted R-Square	0.703			0.549			0.676		
N	5,386			1,690			2,613		

Source: Authors' calculations from the 2004 and 2008 SIPP data matched to SER and DER earnings data.
Notes: Sample includes workers with a DC plan offer in the pension topical module year and no more than five years on the current job and with a prior job. Low family income is based is based on family income in the bottom two family income quintiles (<1.48 times average wage 2004 panel, <1.32 times average wage in 2008). High family income is based is based on family income in the top two family income quintiles (>2.09 times average wage 2004 panel, >1.93 times average wage in 2008). T references the year the current job began. Earnings are relative to the annual economy-wide average wage.

Table A2b. Parameter Estimates, Mean Values, and Estimated Slope in Earnings Relative to the Average Wage among Female Workers on a Current Job for One to Five Years with a DC Offer

	ALL			Low Family Income			High Family Income		
	Parameter			Parameter			Parameter		
	Estimate	Mean	dy/dx	Estimate	Mean	dy/dx	Estimate	Mean	dy/dx
Mean earnings/average wage		0.866			0.627			1.207	
Intercept	0.3080	1.000		0.2578	1.000		0.3725	1.000	
Maximum(0, age-35)	-0.0062	10.623	-0.005	-0.0022	10.909	-0.001	-0.0111	10.223	-0.013
Maximum(0, age-45)	0.0065	3.802	0.006	-0.0071	4.114	-0.004	0.0106	3.426	0.013
Maximum(0, age-50)	-0.0148	1.810	-0.013	0.0023	2.075	0.001	-0.0132	1.498	-0.016
High school graduate	0.0493	0.211	0.043	0.0622	0.285	0.039	0.1108	0.125	0.134
Some college	0.0970	0.393	0.084	0.0886	0.442	0.056	0.1878	0.333	0.227
Bachelor degree	0.1771	0.235	0.153	0.1534	0.161	0.096	0.2838	0.314	0.343
Graduate degree	0.2600	0.133	0.225	0.2229	0.064	0.140	0.3378	0.221	0.408
Black	-0.0234	0.119	-0.020	0.0004	0.184	0.000	-0.0300	0.062	-0.036
Asian	0.0208	0.037	0.018	0.0045	0.025	0.003	0.0133	0.051	0.016
Immigrant	0.0612	0.112	0.053	0.0750	0.113	0.047	0.0381	0.110	0.046
Divorced	0.0380	0.181	0.033	0.0360	0.297	0.023	0.1270	0.073	0.153
Youngest<6	-0.0877	0.128	-0.076	-0.0655	0.093	-0.041	-0.0997	0.165	-0.120
6<=youngest<12	-0.0279	0.168	-0.024	-0.0142	0.163	-0.009	-0.0229	0.174	-0.028
Number of kids<18	0.0053	0.872	0.005	-0.0040	0.789	-0.002	0.0080	0.968	0.010
Poor health	-0.1440	0.008	-0.125	-0.1100	0.014	-0.069	-0.2024	0.000	-0.244
Fair health	-0.0392	0.053	-0.034	-0.0229	0.080	-0.014	-0.0301	0.031	-0.036
Good health	-0.0189	0.259	-0.016	0.0112	0.314	0.007	-0.0410	0.201	-0.049
Have a condition the limits work	-0.1286	0.060	-0.111	-0.0959	0.096	-0.060	-0.0744	0.026	-0.090
Have DB plan dummy	0.0702	0.251	0.061	0.0220	0.190	0.014	0.0500	0.304	0.060
Have CB plan dummy	0.0900	0.051	0.078	-0.0249	0.041	-0.016	0.0652	0.062	0.079
Employer contribution/ worker earnings	-0.4186	0.027	-0.362	-0.1708	0.025	-0.107	-0.8185	0.029	-0.988
Employee contribution/ average wage	1.8010	0.059	1.559	1.8604	0.027	1.166	1.3707	0.099	1.655
Employer contribution depends entirely on own contribution	0.1209	0.2345	0.1046	0.0659	0.190	0.041	0.1080	0.277	0.130
Employer contribution depends partly on own contribution	0.1176	0.0945	0.1018	0.0658	0.072	0.041	0.1086	0.117	0.131
Employer contribution depends not at all on own contribution	0.1327	0.0807	0.1149	0.1025	0.064	0.064	0.0789	0.094	0.095
Covered by union contract	0.0430	0.107	0.037	0.0193	0.097	0.012	-0.0170	0.114	-0.021
Employer/union pays all health insurance cost	0.0256	0.129	0.022	0.0086	0.115	0.005	0.0518	0.134	0.063
Employer/union pays no health insurance cost	-0.1039	0.023	-0.090	-0.0880	0.037	-0.055	-0.1023	0.014	-0.123
No Employer provided health insurance	-0.2162	0.324	-0.187	-0.2077	0.311	-0.130	-0.1237	0.354	-0.149
Current job tenure	0.0102	2.754	0.009	0.0051	2.671	0.003	0.0113	2.829	0.014

Table A2b. Parameter Estimates, Mean Values, and Estimated Slope in Earnings Relative to the Average Wage among Female Workers on a Current Job for One to Five Years with a DC Offer

	ALL			Low Family Income			High Family Income		
	Parameter			Parameter			Parameter		
	Estimate	Mean	dy/dx	Estimate	Mean	dy/dx	Estimate	Mean	dy/dx
Maximum(0, work years -0)	-0.0261	21.248	-0.023	0.0006	20.862	0.000	0.0096	21.558	0.012
Maximum(0, work years -5)	0.0185	16.316	0.016	-0.0026	15.933	-0.002	-0.0427	16.624	-0.052
Maximum(0, work years -10)	0.0101	11.585	0.009	0.0000	11.257	0.000	0.0372	11.845	0.045
Maximum(0, work years - 25)	-0.0069	2.020	-0.006	0.0019	2.079	0.001	-0.0053	1.938	-0.006
Work t-1	-0.0880	0.918	-0.076	-0.0671	0.913	-0.042	-0.0495	0.921	-0.060
Work t-2	-0.0462	0.913	-0.040	-0.0599	0.903	-0.038	-0.1025	0.920	-0.124
Work t-3	-0.0160	0.907	-0.014	-0.0944	0.901	-0.059	-0.0887	0.910	-0.107
Work t-4	-0.0240	0.897	-0.021	0.0084	0.898	0.005	0.0326	0.896	0.039
Work t-5	-0.0304	0.890	-0.026	-0.0801	0.880	-0.050	-0.0341	0.893	-0.041
Log(earning t-1 +.25)	0.2838	-0.131	0.392	0.2129	-0.339	0.289	0.2506	0.097	0.355
Log(earning t-2 +.25)	0.0526	-0.103	0.070	0.1312	-0.301	0.168	0.0844	0.107	0.118
Log(earning t-3 +.25)	0.0378	-0.118	0.051	0.0053	-0.307	0.007	0.0641	0.080	0.093
Log(earning t-4 +.25)	0.0151	-0.144	0.021	0.0250	-0.311	0.032	-0.0096	0.038	-0.015
Log(earning t-5 +.25)	0.0665	-0.165	0.096	0.0761	-0.336	0.103	0.0741	0.013	0.117
DC in prior job	-0.0234	0.604	-0.020	-0.0388	0.511	-0.024	-0.0630	0.695	-0.076
DB in prior job	-0.0206	0.124	-0.018	-0.0286	0.092	-0.018	-0.0165	0.160	-0.020
Adjusted R-Squared	0.627			0.556			0.640		
Unweighted N	5,428			2,141			2,176		

Source: Authors' calculations from the 2004 and 2008 SIPP data matched to SER and DER earnings data.
Notes: Sample includes workers with a DC plan offer in the pension topical module year and no more than five years on the current job and with a prior job. Low family income is based is based on family income in the bottom two family income quintiles (<1.48 times average wage 2004 panel, <1.32 times average wage in 2008). High family income is based is based on family income in the top two family income quintiles (>2.09 times average wage 2004 panel, >1.93 times average wage in 2008). T references the year the current job began. Earnings are relative to the annual economy-wide average wage.

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