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PENSION WEALTH AT MIDLIFE: COMPARING SELF-REPORTS WITH PROVIDER DATA

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This paper evaluates the accuracy of estimates of pension wealth based on self-reports by comparing them to estimates based on provider data. Using data from the Health and Retirement Study, we found that few workers are well informed about their future pension benefits. Self-reports were often incomplete and typically varied widely from those based on information from providers. In defined benefit (DB) plans, discrepancies were greatest for workers who had limited education, earned low wages, and did not expect to retire soon. Differences in median pension wealth were smaller at the aggregate level than the individual level, because individual differences tended to offset each other when aggregated. Provider data appear better than self-reports for DB plans, but not for defined contribution (DC) plans. Where both are available, the best method of computing pension wealth may be to estimate DB wealth from provider data and to estimate DC wealth from self-reports.

INTRODUCTION

Private pensions play an important role in the economy. In 1993, private pension plan assets amounted to $2.3 trillion, and had grown 332 percent in real terms since 1975 through both improved funding of existing commitments and additional entitlements to future benefits (U.S. Department of Labor, 1997). A recent study indicates that 62 percent of non-elderly households in 1992 had some pension coverage, and for covered households median pension wealth was 2.4 times larger than median non-pension net worth (Kennickell and Sunden, 1997). Pensions are an important source of retirement income for many elderly persons. In 1996, median annual private pension income was $5,306 among elderly pension recipients, accounting for 27 percent of their household income (U.S. Social Security Administration, 1998). Pensions have also been shown to have important effects on behavior, including retirement and savings decisions (see, for example, Gustman and Steinmeier, 1998; Gale, 1998; Lumsdaine, 1996).

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Despite their importance, reliable estimates of pension wealth for households or individuals are scarce because they are difficult to compute, especially for the non-elderly. For elderly persons who are already receiving retirement benefits, pension income can be easily observed. Given information about current pension income, pension wealth can be computed as the present discounted value of the future stream of payments, under the assumption that payments remain fixed (in real or nominal terms) or vary in predictable ways with changes in the price level.[1] For the non-elderly who are not yet receiving benefits, pension wealth is much more difficult to estimate. In traditional defined benefit (DB) plans, which pay workers guaranteed benefits upon retirement based on final salary and years of service, measures of pension wealth require estimates of the level of expected future benefits, the age at which they would begin, and the provisions for cost-of-living adjustments that might lead to changes in the level of nominal benefits during retirement. In defined contribution (DC) plans, where pension benefits are financed from individual retirement accounts to which employers and employees generally contribute, measures of pension wealth depend upon estimates of the expected accumulated balance in the plan account at the time of retirement. In addition to the imposing data demands, calculations of pension wealth are complex because wealth varies by the age at which the stream of benefits is assumed to begin, and separate estimates can be computed for each assumed retirement age. Recent estimates of pension wealth have been based either on self-reports of future pension benefits, which are available in a few national household surveys, or on detailed information on the specific parameters of pension plans collected directly from plan providers. Little is known about how estimates of pension wealth based on self-reports compare to those based on provider data.

A number of recent studies have estimated pension wealth from self-reports of future pension benefits included in household surveys. Kennickell and Sunden (1997) estimated median pension wealth of $31,700 for non-elderly households in 1992, using self-reports in the Survey of Consumer Finances (SCF). Estimates of median pension wealth based on self-reports in the Health and Retirement Study (HRS) (for households in 1992 in which at least one member was between the ages of 51 and 61) ranged from about $41,000 to $74,000 (Honig, forthcoming; Smith, 1995). McGarry and Davenport (1998) estimated that median pension wealth (for individuals ages 51 to 61 with pension coverage in 1992, projected to the time of expected retirement) was $62,900, based on self-reported data in the HRS. Persons with coverage accounted for about two-thirds of their sample.

The major drawback of studies of pension wealth based on self-reports is that many persons have only limited knowledge of their pension plans. Mitchell (1988) compared respondent self-reports of specific provisions of pension plans with linked information from pension providers in the 1983 SCF and found that respondents' knowledge of their plans was often inaccurate. For example, only

[1]However, since cost-of-living adjustments are generally not observable in the data and plans vary in the degree of inflation protection they provide, it is not always clear what assumptions to make about the growth of pension benefits during retirement. In addition, since the data do not generally indicate whether pension income is being received in the form of single life annuities or as joint and survivor annuities, it is not always clear whether to assume that the stream of payments continues for the expected life of the recipient or of the recipient and spouse.

42 percent of workers in DC plans reported that their employers contributed to their plans, whereas 91 percent of employers reported making contributions. Many workers were also misinformed about their plans' early retirement provisions. Only about three-quarters of respondents believed that they would be able to retire early, although virtually all pension plans in the sample permitted early retirement. Moreover, about one-third of workers did not even attempt to estimate their plans' early retirement ages, and about two-thirds of those workers who offered answers gave inaccurate responses. Workers had better information about their plans' normal retirement provisions, but more than 40 percent of workers reported normal retirement ages that were inconsistent with information provided by employers. Since workers appear to know so little about basic characteristics of their pension plans, it seems unlikely that their estimates of future pension benefits, which require detailed knowledge of pension formulas, would be accurate.

The limitations of self-reports have led a number of researchers to estimate pension wealth based on detailed plan formulas collected from pension providers. Due to the difficulty in collecting detailed pension data on large, nationally representative samples of workers, some of these studies have been based on selected groups of workers. For example, Lumsdaine, Stock, and Wise (1992, 1994, 1995) have used detailed pension plan information from a single employer to assess the impact of pension wealth and pension accruals on retirement behavior. The rules governing public employee retirement systems are set by Federal and state law, so that pension plan parameters for workers in the public sector are publicly available. By linking plan parameters to worker information on earnings, job tenure, occupation, and state of employment, accurate estimates of pension wealth for workers in the public sector can be generated (Johnson, 1997). However, because these studies are based only on small subsets of workers, the results may not generalize to the broader population. Estimates of pension wealth that better represent the entire population can be obtained from national household surveys that link information from respondents with information from plan providers. The SCF, HRS, and National Longitudinal Survey of Mature Women (NLSMW) include special pension supplements that collected detailed information about pension plans from employers. Although estimates of pension wealth based on provider information vary depending upon the particular assumptions employed and the demographic group studied, all of the estimates indicate that pension wealth is an important part of household wealth and labor market compensation. For example, provider information from the HRS indicates that median pension wealth projected to the time of expected retirement was $60,100 and pensions accounted for 18 percent of net wealth, for households in 1992 in which at least one member was between the ages of 51 and 61 (Gustman *et al.*, 1997). At the individual level, Johnson, Sambamoorthi, and Crystal (1999) estimated that median pension wealth on the current job was $120,200 for men and $68,100 for women in 1992 for full-time wage and salary workers ages 51 to 61 in the HRS, assuming that they remained with their employers until age 65. In 1983, for private-sector workers in the SCF with pensions, median pension wealth in DB and combination plans was $100,000, again assuming that workers did not retire until age 65 (Gustman and Steinmeier, 1989). For working women

at mid-life with pension coverage in the NLSMW, mean pension wealth in 1992 was $40,700 on the current job, and pension accruals equaled about 10 percent of wages (Johnson, 1995).

The goals of this paper are to evaluate the validity of estimates of pension wealth from self-reports by comparing them to estimates based on provider data, using a common set of assumptions, and to identify particular groups for which self-reports appear to be most accurate. The relative accuracy of self-reports is important because they are generally less expensive to collect and easier to analyze than provider data. Also, because of the difficulties in collecting information from employers, non-response rates are generally high for provider data. Since estimates of pension wealth depend critically upon their underlying assumptions, it is difficult to assess the accuracy of self-reports by comparing published estimates of pension wealth based on self-reports with estimates based on provider data from different studies, such as those cited above. For example, different assumptions about future rates of interest, inflation, wage growth, mortality, and worker turnover can lead to large differences in estimates of pension wealth. Estimates also depend upon the particular demographic group under study. Pension wealth will be larger at mid-life than at younger ages and will be larger for workers than for those not currently employed. In addition, similarities in the average overall level of pension wealth measured with self-reports and provider data can mask substantial discrepancies between the two sets of estimates within sub-groups of the population or at the individual level.

Data

The data for our study come from the first wave of the HRS, a large survey of persons nearing retirement that includes both self-reports of expected future pension benefits and detailed information about plan parameters from pension providers. Conducted by the Institute for Social Research (ISR) at the University of Michigan, the HRS interviewed in 1992 a nationally representative sample of men and women ages 51 to 61 and their spouses (regardless of age) and re-surveyed them every two years. The baseline survey gathered data on 12,652 persons in 7,702 households, including oversamples of blacks, Hispanics, and Florida residents. In addition to pensions, information was collected on the age at which respondents expected to retire completely and on their income, assets, employment history, health, and demographics.

We restricted our sample to age-eligible respondents who were employed full time as wage and salary workers at the time of the survey. We eliminated respondents younger than age 51 or older than age 61 since they were included in the survey only because they were married to an age-eligible respondent, and thus do not represent a random sample of persons in their age group. We excluded part-time and self-employed workers because pension provider data were available for only very few of them. Members of the Armed Forces were also dropped from our sample.

HRS respondents were asked a detailed series of questions about their entitlements to future pension benefits from their current employers or unions, their last employers if not currently working, and any past employers for whom

they had worked for at least five years. Persons who reported being part of employer-sponsored pension or retirement plans were questioned about the number of plans in which they were included, and for each plan they were asked about plan type (DB, DC, or some combination of the two) and the number of years they had participated in the plan. The survey instrument described DB plans to respondents as retirement plans in which "benefits are usually based on a formula involving age, years of service and salary," while DC plans were described as those in which "money is accumulated in an account for you." Respondents with DB plans were questioned about the age at which they could begin to receive full benefits, the amount of benefits they would receive at that age (as a percent of final pay, a fixed dollar amount per period, or a lump sum payment), and their expected earnings at that age.[2] They were also asked whether their DB plans were integrated with Social Security, but they were not asked how their pension benefits were adjusted once Social Security payments began. Participants in DC plans were asked about the balance in their pension accounts and the amounts they and their employers each contributed to the plan.[3] There were 3,118 respondents in our sample who reported pension coverage on the current job and thus had at least some self-reported information about future pension benefits, representing 71 percent of our total sample of full-time wage and salary workers.

Information about pension wealth was also collected from pension providers. Respondents who reported participating in pension plans were asked to supply the names and addresses of the employers (or unions) who sponsored the plans. Summary plan descriptions, which provide information about retirement ages, vesting requirements, mandatory employee and employer contributions to the plan, cost of living adjustments, Social Security offsets, and the formulas with which pension benefits are based, were then collected from the plan administrators. Some descriptions were also gathered from records at the U.S. Department of Labor when HRS staff were unable to obtain information from employers. Detailed pension information was collected for 3,834 persons, or about two-thirds of the respondents who reported pension coverage at wave 1. In our sample of full-time wage and salary workers, there were 2,149 respondents linked to information from providers.

Methods

We estimated median pension wealth on the current job for our sample of full-time wage and salary workers, based on self-reports and provider data. Since

[2]Respondents in DB plans also reported the age at which they expected to begin receiving benefits and the amount of benefits they expected to receive at that age, as a percentage of final pay or as a fixed dollar amount per period, but since they were not asked about their expected final salary at that age it is not possible to estimate expected future pension income for all defined benefit plan participants. Information was also collected about the earliest age at which they could leave the employer and begin to receive any benefits and the amount by which their benefits would be reduced if they left at the early age.

[3]Those who reported that they could collect payments from their DC plans in the form of regular monthly payments were asked about the youngest age at which they could begin to receive these installments. However, since about 20 percent of DC participants could not receive regular payments, we did not utilize this information when computing pension wealth. Respondents who reported plans that combined features of both DB and DC plans were asked about their own contributions to the plan, but not about their employers' contributions.

the distribution of pension wealth is quite skewed, we focused on the median of wealth instead of the mean. Estimates for the provider sample were computed using software recently developed by ISR. We used version 5a of the pension estimation software, the latest version available at the time we undertook our study. Since this version of the software does not accurately estimate pension wealth earned from past jobs, we have estimated pension wealth accumulated on current jobs only. The macroeconomic assumptions incorporated into our estimates correspond to the intermediate projections of the rates of interest, inflation, and wage growth used by the Social Security Administration in 1998 to assess the financial condition of the OASDI trust fund (U.S. Social Security Administration, 1998). The annual inflation rate was assumed to equal 3.5 percent, the real annual interest rate was assumed to equal 2.8 percent, and wages were assumed to grow at a real annual rate of 0.9 percent.

Computation of Pension Wealth in DB Plans

For DB plans, real pension wealth was defined by equation (1):

$$PW = [T \times W \times \lambda - \phi](1 + i)^{-(R-a)} a_R \tag{1}$$

where T is completed years of job tenure at retirement, W is the final wage base at retirement, expressed in 1992 dollars, λ is the plan-specific percentage factor, ϕ is the reduction in pension benefits due to Social Security integration, R is the retirement age, i is the real interest rate, a is age in 1992, and a_R is a function converting a one-dollar lifetime annuity into its present value as of the retirement age.

The term in brackets in (1) is the value of nominal pension benefits that a worker participating in the plan can expect to receive during the initial year of retirement. For the self-reports, we simply used the level of benefits that the respondents reported that they would receive if they retired at the plan's normal retirement age (the earliest age at which full, unreduced benefits would be paid). Since details about Social Security integration were not available in the self-reports, we set ϕ equal to zero for all DB plan participants.[4] For the provider data, the ISR software combined information on wages and years of service with pension parameters to estimate expected benefits. Years of expected job tenure T was computed by taking the self-reported value of tenure on the current job in 1992 and assuming that workers remained with the employer until retirement. Retirement age was set equal to the plan's normal retirement age, as provided by the respondent in the self-reports.[5] The definition of the final wage base W, which can vary by plan, was specified in the summary plan description. In some cases it may be defined as the worker's average annual earnings over the entire career,

[4]We also computed median pension wealth after excluding respondents who reported that their plans were integrated with Social Security, because our failure to adjust benefits in integrated plans may bias our estimates of pension wealth in the self-reports. Only about 13 percent of full-time workers with DB coverage reported participating in integrated plans.

[5]Some respondents may expect to leave their jobs before they reach the age at which they could first begin collecting full pension benefits. Our provider estimates will overstate pension wealth for these cases.

whereas in other cases it is defined as annual earnings in the final year of employment; typically, however, it is defined as average earnings over the past three to five years. To compute the final wage base at the time of retirement, the ISR program projected the current 1992 wage as reported by the respondent forward to the assumed retirement age. Since real wages do not generally increase over time for workers approaching retirement age (Gustman and Steinmeier, 1985; Johnson and Neumark, 1996), we assumed that the rate of real increase for current earnings was equal to the economy-wide growth in wages (0.9 percent per year) and that real earnings did not change because of the respondent's progression through the lifecourse. The percentage factor λ, which was also taken from the summary plan descriptions, is sometimes a step function of years of service or of earnings. For cases in which the pension plan sets benefits equal to a fixed amount per year of service, independent of earnings, W in (1) is set equal to unity and λ is set equal to the dollar amount per year of service. The reduction factor ϕ also takes different forms in different plans. In some plans, it is equal to the total amount of Social Security benefits the worker is expected to receive at age 65, whereas in other plans it may be a given fraction of the Social Security taxable wage base times years of service, for example. Pension benefits, and hence pension wealth, were zero when T was less than the required number of years for vesting.

The nominal benefits calculated for the first year of retirement are received annually for the remainder of the retiree's life, although the size of the payment may be subject to cost-of-living adjustments.[6] The annual benefit is converted into its annuity value by the function a_R, shown in (2):

$$a_R = \sum_{t=R}^{115} \left(\frac{1 + k_t}{(1 + \pi)(1 + i)} \right)^{t-R} S_{R,t} \tag{2}$$

where k_t is the COLA at age t, $s_{R,t}$ is the probability of surviving from the retirement age to age t, π is the change in the Consumer Price Index from period $t-1$ to t, and i is again the real interest rate. Survival probabilities after retirement were tabulated separately for men and women. (All respondents were assumed to survive with certainty until retirement, because the ISR software we used did not incorporate mortality probabilities until after the retirement age was attained.[7]) The value of k_t depends upon the inflationary environment and the COLA provisions of the specific pension plan. For the provider estimates, COLA provisions were available from the summary plan description. For the self-reports, where no information on COLAs are available, we assumed that benefits increased at a rate equal to one half of the change in the CPI. Real retirement benefits were further discounted from the assumed retirement age to the current age in 1992 by the real interest rate.

[6]The baseline HRS questionnaire did not ask respondents about the type of annuities in which they expected to receive their pension income. We assumed that all respondents estimated expected pension income on the basis of single-life annuities.

[7]This assumption has been relaxed in later versions of the program.

Computation of Pension Wealth in DC Plans

In DC plans, pension wealth was defined as the projected balance in the plan account at retirement, discounted to 1992 (the time of the survey). Workers were assumed to retire at the age they cited in the self-reports when asked when they expected to begin to receive any benefits from their DC plans. In the provider estimates, the ISR software projected account balances based upon the level of contributions to the plan and income earned on past contributions. Mandatory contributions, by both employers and employees, were specified in the summary plan descriptions. Information about additional voluntary contributions by employees was reported by respondents at the time of survey, and the level of voluntary contributions was assumed to remain constant while the respondent remained in the plan. Past contributions were assumed to grow at the nominal rate of interest, set equal to 6.3 percent here.

Estimates of pension wealth in DC plans from self-reports were based on the reported balance in the plan account at the time of the survey in 1992. The balance was assumed to grow each year until retirement with contributions from both employers and employees (as reported by the respondent) and with investment earnings.[8] The growth rate in contributions (from the time of the wave 1 survey until retirement) was set equal to the growth in real wages (which was assumed to equal 0.9 percent per year). For consistency with the provider estimates, we assumed that the rate of return earned by funds invested in the plan was equal to the nominal rate of interest.

Comparisons of Pension Wealth from Provider Data and Self-Reports

We compared pension wealth estimated from provider data and from self-reports for respondents with complete data from both sources for the same plan type. We eliminated from our sample respondents whose self-reports of plan type were inconsistent with the type of plan specified in the provider data.[9] Table 1 reports discrepancies in pension plan type between self-reports and provider data. Among workers linked to provider data on DB plans, 16 percent reported that they only participated in DC plans.[10] Misreporting of plan type was even more common among those linked to DC plans supplied by providers. Fully 36 percent of workers linked to DC plans reported that they participated only in DB plans. For respondents linked to DB plans, discrepancies in plan type between self-reports and provider data were more common among workers with limited education, low wages, and limited job tenure, and among workers who did not expect

[8]Since respondents with plans that combined features of both DB and DC plans were not asked about their employers' contributions to the plan, we considered only employee contributions when computing wealth from self-reports for these plans. Our sample included only 105 workers with this type of plan (out of 3,118 workers with pension coverage in our sample), and they were included only in our aggregate estimates of pension wealth, not in the individual-level comparisons described below.

[9]Since provider data are available only for respondents who reported participating in plans and provider data were not successfully linked to all respondents who reported plan participation, we could not identify discrepancies in pension coverage between self-reports and provider data. Consequently, we based our estimates of pension coverage on self-reports.

[10]Although these workers' claims that they do not participate in DB plans are most likely inaccurate, it is possible that they also participated in DC plans that the providers failed to report or in DC plans from different providers that did not supply data to ISR.

TABLE 1

DISCREPANCIES IN PLAN TYPE BETWEEN SELF-REPORTS AND PROVIDER DATA

	Provider-Reported DB Plans		Provider-Reported DC Plans	
	N	Percentage Who Report DC Plans Only	N	Percentage Who Report DB Plans Only
All observations	1,619	15.9	1,073	36.3
Gender				
Male	937	14.6	616	32.3
Female	682	17.7	457	41.8
Education				
Did not complete high school	233	26.6	183	43.2
High school graduate	550	16.7	375	38.4
Some college	341	18.5	226	28.8
College graduate	495	8.3	289	35.3
Race				
White	1,289	15.2	872	33.5
Non-white	330	18.8	201	48.8
Age				
Age 55 and younger	864	15.4	576	35.4
Age 56 and older	755	16.6	497	37.4
Years to retirement				
Less than 5	454	12.6	242	42.6
5–10	636	16.0	408	33.3
More than 10	364	19.0	301	32.6
Missing	165	18.2	122	43.4
Marital status				
Currently married	1,215	14.8	825	37.1
Not currently married	404	19.3	248	33.9
Years of job tenure				
5 or fewer	191	26.2	198	34.3
5.01–15	417	21.6	324	36.1
15.01–20	254	17.7	146	38.4
More than 20	757	9.6	405	36.8
Union status				
Member	750	12.0	323	51.7
Non-member	869	19.3	750	29.7
Firm size (no. of employees)				
Fewer than 500	318	14.8	269	35.3
500 and over	1,301	16.2	804	36.7
Hourly wage				
$10 and under	381	28.6	311	45.3
$10.01–$15	523	15.9	329	36.5
Over $15	715	9.2	433	30.7

Note: The sample was restricted to current full-time wage and salary workers, ages 51 to 61, with pension coverage on the current job and for whom provider data were available.

to retire in the near future. For example, 27 percent of high school dropouts linked to DB plans reported participating only in DC plans, compared with only 8 percent of college graduates. Surprisingly, most of these patterns are not evident for workers linked to DC plans. For example, 43 percent of workers linked to DC plans who expected to retire within five years reported participating only in

DB plans, compared with only 33 percent of workers who did not expect to retire for more than ten years.

We compared estimates of pension wealth at both the individual and aggregate levels. At the individual level, we computed the absolute value of the difference in pension wealth from self-reports and providers and estimated the median absolute difference and median absolute percentage difference for the sample. Absolute percentage differences were defined as the absolute difference in the two estimates divided by the estimate based on provider data. We also computed the percentage of respondents for whom the percentage difference in wealth estimates based on self-reports and provider data, defined as self-reported wealth minus provider wealth divided by provider wealth, fell within the following ranges: less than –50 percent, between –50 percent and –25 percent, between –25 percent and 25 percent, between 25 percent and 100 percent, and more than 100 percent. We compared differences in estimates from self-reports and provider data by personal and job characteristics. All comparisons were done separately for DB and DC plans. When comparing estimates at the individual level, we restricted our analyses to respondents with provider data, complete self-reports, and positive pension wealth (according to the provider data). Since it was not clear which self-report to compare with a given set of plan parameters from the provider sample for workers who reported two or more plans of the same type, we restricted our comparisons to workers with no more than one plan of a given type when comparing wealth at the individual level.

We also compared estimates of pension wealth at the aggregate level. Using all respondents in our sample of full-time workers with pension coverage from their current employers, we compared median pension wealth estimated from self-reports and from provider data. Although focusing on workers with pension information from both self-reports and providers and who participated in exactly one DB or DC plan can shed light on the accuracy of self-reports, examining this restricted sample does not reveal how wealth compares in the broader population of covered workers. Although discrepancies in pension wealth between self-reports and provider data may be very large at the individual level, aggregate estimates of median pension wealth may be similar if individual differences offset each other.

In computing aggregate levels of pension wealth, we needed to account for non-randomness in the provider matches and in the response rates for the self-reports. The HRS respondents who were successfully linked with summary plan descriptions do not represent a random sample of respondents with pension coverage. For full-time wage and salary workers with pension coverage on the current job, Table 2 compares personal and job characteristics of respondents linked to provider information to the characteristics of all respondents in our sample who reported pension coverage on the current job. The major difference between the two samples is that the provider sample over-represents workers in large firms with DB plans. For example, 47 percent of full-time workers in the provider sample participated in DB plans only and another 31 percent had combination coverage (defined as having both DB and DC plans or a single plan that incorporated both DB and DC components), compared with 42 percent of covered full-time wage and salary workers with DB plans only and 28 percent

with combination coverage according to the self-reports. Fully 30 percent of covered full-time workers in our sample reported participating in DC plans alone, but only 22 percent of the cases linked to information from providers had DC plans alone. The true over-representation of DB plans in the provider data may be even larger than these numbers suggest. We classified plan type in Table 2 using information from respondents for the self-reports, but using information from pension providers for the provider sample. Since respondents are more likely to misclassify plans as DB rather than DC, as reported in Table 1, the proportion of workers with DC plans may be even higher than the self-reports indicate. The provider sample also over-represents workers in large firms. About 75 percent of the members of our provider sample worked for firms with at least 500 employees, compared with only 68 percent of those in our full sample with self-reported pension characteristics.

Although the distributions of other characteristics were similar for the two samples, failing to account for the over-representation of workers in DB plans and large firms may bias aggregate estimates of average pension wealth in the provider sample, particularly if pension wealth varies by plan type and firm size. We corrected for the over-representation by reweighting the pension provider data so that the distribution of full-time workers by firm size and plan type was consistent with the observed distribution among full-time workers with pension coverage in the full HRS sample. The weights were computed as the ratio of the fraction of observations in the full HRS sample with a given plan type and firm size to the fraction of observations in the pension provider sample with the same pension plan and firm size. In both samples, the frequency computations were restricted to full-time wage and salary workers with pension coverage on the current job. The largest sample weights were assigned to workers in firms with fewer than 100 employees and in DC plans, who were assigned weights of 2.15. The smallest weights, equal to 0.74, were assigned to workers in firms with 500 or more employees and in DB plans. Given the discrepancies in plan type between self-reports and provider data reported in Table 1, constructing weights for the provider data that duplicate the distribution of plan type in the self-reports may be problematic. However, since workers are more likely to report falsely DB plans than DC plans, the provider data actually over-represent DB plans by even more than the weights imply. As a result, failing to weight the provider data by plan type would generate less accurate measures of aggregate pension wealth, even though the weights we did construct probably do not fully correct for the over-representation of DB plans.

To reduce the bias that would result from examining only complete cases of self-reports if data were missing non-randomly, we imputed missing information about pension plans when estimating aggregate levels of pension wealth. Missing plan characteristics were imputed using hotdeck procedures, in which an observation with missing data for a particular characteristic was assigned the value of the characteristic from a randomly selected observation with valid data in the same gender and job tenure group.[11] This procedure will not completely eliminate

[11]The tenure groups were defined as 15 or fewer and more than 15 years.

TABLE 2

PERCENTAGE DISTRIBUTION OF CHARACTERISTICS OF FULL-TIME WAGE AND SALARY WORKERS WITH PENSION COVERAGE, BY SOURCE OF DATA

	Self-Reports	Provider Data
Plan type		
DB only	41.9	47.1
DC only	30.1	21.7
Combination	28.0	31.2
Gender		
Male	59.1	59.0
Female	40.9	41.0
Education		
Less than 4 years of high school	15.8	14.0
High school graduate	36.4	34.9
Some college	21.2	20.7
College graduate	26.6	30.4
Race		
White	86.8	86.5
Non-white	13.2	13.5
Age		
55 and younger	54.8	54.3
56 and older	45.2	45.7
Marital status		
Currently married	77.0	77.0
Divorced, widowed, or separated	5.8	5.8
Never married	17.3	17.1
Years of job tenure		
5 or fewer	17.4	14.7
5.01–15	29.8	28.0
15.01–20	13.6	14.2
More than 20	39.3	43.1
Union		
Member	36.5	39.2
Non-member	63.5	60.8
Firm size (no. of employees)		
Fewer than 500	32.5	25.5
500 and over	67.5	74.5
Hourly wage		
$10 and under	26.5	23.9
$10.01–$15	31.3	32.2
Over $15	42.2	43.9
Number of observations	3,118	2,149

Note: The sample was restricted to current full-time wage and salary workers, ages 51 to 61, with pension coverage on the current job. Tabulations were weighted to account for the oversampling of blacks, Hispanics, and Florida residents in the HRS sample. Combination plans included respondents with both DB and DC plans and those with a single plan that incorporated both DB and DC components. All worker characteristics were based on information provided by respondents, except for plan type in the provider sample, which was determined using information from pension providers. There are fewer provider-based cases reported here than in Table 1 because some respondents in Table 1 had provider data for both DB and DC plans.

the problem of non-response bias, however, if non-responses occur non-randomly within gender and job tenure groups.

Results

Individual-Level Comparisons of Pension Wealth in DB Plans

Table 3 reports estimates of pension wealth from provider data and self-reports for members of the sample with positive pension wealth, complete self-reports, and exactly one DB plan (and any number of DC plans) from their current employers. The first column of the table reports the percentage of the sample with complete self-reports. Overall, only 55 percent of respondents with DB plans reported complete information about their pension plans; the remaining 45 percent of the sample either did not know the information requested or refused to provide it to the interviewers.[12] Response rates increased with education, years of job tenure, and wages. For example, 64 percent of full-time wage and salary workers earning more than $15 per hour provided complete information about their DB pension plans, compared with only 40 percent of those earning $10 or less per hour. Response rates were also higher for whites than for non-whites and for workers who planned to retire within the next five years than for those who did not plan to retire for more than 10 years. Out of 1,128 respondents linked to provider data for exactly one DB plan, our sample was reduced to 621 respondents after eliminating cases with incomplete self-reports.

For all cases with complete self-reports, median wealth in DB plans based on provider data was $127,790, whereas median wealth based on self-reports was $106,414. The difference in median wealth between the two estimates was $21,376, or 17 percent of the median provider estimate of pension wealth. The median difference in estimates within individuals was much larger than the aggregate difference in median wealth, however. The median absolute difference between estimates in our sample was $52,034. Expressed as a percentage of the provider estimate of wealth, the median absolute difference was 43 percent of pension wealth. On average, then, self-reports differed substantially from provider estimates of pension wealth at the individual level, even among those who were able to provide complete information about their future pension benefits.

Differences in pension wealth estimated from self-reports and from provider data may be exacerbated by our failure to account for the integration of some plans with Social Security in the computation of pension wealth based on self-reports. We did not adjust our estimates of pension wealth based on self-reports when respondents reported that pension benefits would change once they began to receive Social Security benefits, because respondents were not asked how their pension benefits would change. Since estimates based on provider data were adjusted for Social Security integration, failure to adjust the self-reports would introduce additional error into the estimates. However, only 17 percent of workers with complete self-reports for DB plans reported that their plans were integrated with Social Security, and estimates based on self-reports were not

[12]Almost all of the missing data problems arose from non-response to questions about expected future pension benefits. Only about 7 percent of respondents were missing information on the age at which they become eligible to collect full pension benefits.

TABLE 3

MEDIAN PENSION WEALTH IN DB PLANS, ESTIMATED FROM SELF-REPORTS AND PROVIDER DATA

	Percentage of Sample with Complete Self-Reports	*N*	Self-Report Estimates	Provider Estimates	Difference in Median	Median Absolute Difference	Median Absolute Percentage Difference
All observations	55.1	621	106,414	127,790	−21,376	52,034	42.7
Gender							
Male	62.8	412	136,324	149,681	−13,357	54,981	41.0
Female	44.3	209	77,754	116,816	−39,062	48,520	44.4
Education							
Did not complete high school	44.9	61	58,589	54,636	3,953	28,289	47.2
High school graduate	54.6	213	97,065	89,467	7,598	41,268	41.9
Some college	58.3	134	87,073	125,774	−38,701	49,633	43.6
College graduate	57.3	213	165,952	195,640	−29,688	81,888	41.3
Race							
White	58.6	540	103,948	126,404	−22,456	50,830	42.1
Non-white	36.3	81	130,406	146,458	−16,052	69,269	44.3
Age							
Age 55 and younger	52.7	347	106,826	148,161	−41,335	63,617	45.4
Age 56 and older	58.4	274	104,598	115,944	−11,346	41,259	38.8
Years to retirement							
Less than 5	62.7	192	166,560	183,651	−17,091	62,321	41.3
5–10	59.1	273	87,799	113,234	−25,435	48,959	42.0
More than 10	48.6	122	70,380	98,710	−28,330	57,205	48.6
Missing	31.2	34	106,772	137,489	−30,717	58,137	37.4
Marital status							
Currently married	56.8	493	108,048	133,814	−25,766	50,152	41.3
Not currently married	49.2	128	99,521	120,732	−21,211	65,436	50.0
Years of job tenure							
5 or fewer	43.6	48	34,685	41,821	−7,136	22,771	49.9
5.01–15	48.9	136	62,835	67,068	−4,233	31,805	46.3
15.01–20	54.6	101	89,540	133,814	−44,274	48,529	46.5
More than 20	60.5	336	167,587	195,475	−27,888	72,860	37.6
Union status							
Member	56.9	307	126,822	121,908	4,914	57,209	43.5
Non-member	53.4	314	91,026	140,398	−49,372	48,678	41.9
Firm size (no. of employees)							
Fewer than 500	53.2	126	113,399	141,930	−28,531	48,740	37.9
500 and over	55.6	495	105,190	127,498	−22,308	52,504	43.7
Hourly wage							
$10 and under	40.4	91	42,731	41,340	1,391	18,867	46.3
$10.01–$15	51.0	195	82,547	95,854	−13,307	41,268	41.6
Over $15	64.3	335	179,617	200,658	−21,041	84,028	42.5

Note: The sample was restricted to current full-time wage and salary workers, ages 51 to 61, with exactly one DB plan from the current employer (but any number of DC plans), with positive pension wealth, and for whom complete self-reported and provider data were available. The absolute percentage difference was computed by dividing the absolute difference in the estimates by the provider estimate.

substantially closer to provider-based estimates for those who reported no integration than for the overall sample. Among those who reported no integration of their plans with Social Security, the median absolute percentage difference in pension wealth was 41 percent, only two percentage points less than the estimated absolute percentage difference for the full sample.[13]

The other rows of Table 3 compare estimates of pension wealth in DB plans for different sub-groups of our sample. The median absolute difference in pension wealth increased with education. For workers who completed four years of college, the median absolute difference was $81,888, compared with only $28,289 for high school dropouts. However, differences in terms of levels may be misleading, because well-educated workers have accumulated much more pension wealth than workers with limited education. Measured as a percentage of pension wealth, the median absolute difference between the two estimates was smaller for college graduates (41 percent) than for high school dropouts (47 percent). Similar patterns were observed for the hourly wage and years of job tenure. When expressed in levels, the median difference in estimates of DB pension wealth increased with the wage earned on the current job and years of service, but the difference decreased when it was expressed in percentage terms. Differences in the estimates decreased with age (in both levels and percentage terms) and increased with years until retirement (when expressed in percentage terms).

The patterns reported in Table 3 for missing self-reports and for differences in estimated wealth support the hypothesis that workers become more knowledgeable about their pensions as the costs of acquiring information fall and the benefits rise. Well-educated workers are probably better able to read the sometimes technical information they receive about their pension plans and are better able to understand the pension formulas that determine future benefits than workers with only limited education, so that education increases the ability to report accurately details of pension plans by reducing the cost of acquiring knowledge about retirement benefits. As workers age and approach retirement, information about future pension benefits becomes more important to workers who can no longer postpone decisions about how to finance retirement. As wages rise and pension wealth increases, knowledge of future pension benefits also becomes more important, because pension wealth represents a larger portion of total retirement savings. The presence of this predictable pattern in the relationship between self-reports and provider data on DB plans, indicating that the estimates converge (albeit slowly) as the net benefits of acquiring information about pension benefits rise, also suggests that the provider data for DB plans were more accurate than the self-reports.

[13]Of course, there is no reason to suspect that workers are well informed about the integration of their plans with Social Security. By focusing only on workers who report no integration, however, we can exclude workers who would not estimate their own pension wealth under the assumption that benefits would remain constant during retirement, because they believe that their pension benefits will change once they begin collecting Social Security. In contrast, workers who believe that their plans are not integrated with Social Security, even if this belief is false, would presumably estimate pension wealth under the assumption of constant benefits throughout retirement. For workers who report no integration, then, our estimates of pension wealth from the self-reported data would better approximate the respondents' presumed estimates of their own pension wealth.

TABLE 4

DISTRIBUTION OF DIFFERENCES IN PENSION WEALTH ESTIMATES FOR DB PLANS

	N	Less than −50%	−50% to −25%	−25% to 25%	25% to 100%	More than 100%
All observations	621	20.9	23.0	27.7	15.3	13.0
Gender						
Male	412	18.0	22.3	28.4	17.0	14.3
Female	209	26.8	24.4	26.3	12.0	10.5
Education						
Did not complete high school	61	14.8	16.4	27.9	19.7	21.3
High school graduate	213	18.3	16.9	32.4	15.5	16.9
Some college	134	24.6	24.6	24.6	16.4	9.7
College graduate	213	23.0	30.3	24.9	13.1	8.9
Race						
White	540	20.9	22.6	28.3	15.6	12.6
Non-white	81	21.0	25.9	23.5	13.6	16.0
Age						
Age 55 and younger	347	24.2	19.9	27.4	15.3	13.3
Age 56 and older	274	16.8	27.0	28.1	15.3	12.8
Years to retirement						
Less than 5	192	19.8	20.3	32.3	15.6	12.0
5–10	273	20.5	25.3	26.7	14.7	12.8
More than 10	122	25.4	20.5	23.8	16.4	13.9
Missing	34	14.7	29.4	23.5	14.7	17.6
Marital status						
Currently married	493	20.5	23.1	28.8	15.6	12.0
Not currently married	128	22.7	22.7	23.4	14.1	17.2
Years of job tenure						
5 or fewer	48	27.1	27.1	14.6	14.6	16.7
5.01–15	136	22.8	15.4	30.1	16.9	14.7
15.01–20	101	22.8	21.8	20.8	16.8	17.8
More than 20	336	18.8	25.9	30.7	14.3	10.4
Union status						
Member	307	17.3	21.8	24.4	18.6	17.9
Non-member	314	24.5	24.2	30.9	12.1	8.3
Firm size (no. of employees)						
Fewer than 500	126	19.0	25.4	30.2	15.1	10.3
500 and over	495	21.4	22.4	27.1	15.4	13.7
Hourly wage						
$10 and under	91	23.1	15.4	28.6	19.8	13.2
$10.01–$15	195	19.5	23.6	28.7	12.3	15.9
Over $15	335	21.2	24.8	26.9	15.8	11.3

Note: Cell entries indicate the percentage of the sample for whom the percentage difference in wealth estimates between self-reports and provider data falls within the specified ranges. The percentage difference was computed by subtracting the provider estimate from the self-report estimate and dividing the difference by the provider estimate. The sample was restricted to current full-time wage and salary workers, ages 51 to 61, with exactly one DB plan from the current employer, with positive pension wealth, and for whom complete self-reported and provider data were available.

Table 4 examines the distribution of the difference between estimates of DB wealth based on self-reports and provider data. The table entries indicate the percentage of workers for whom the percentage difference in wealth estimates falls within given ranges, among those with complete data and exactly one DB

plan from the current employer. Estimates of pension wealth based on self-reports and provider data were consistent for few workers in our sample, and they differed widely for a substantial portion of the sample. Overall, estimates of pension wealth based on self-reports were within 25 percent of the estimates computed from provider data for only 28 percent of workers in our sample. For 13 percent of the sample, estimated wealth based on self-reports was more than twice as large as estimates based on provider data, while for 21 percent of the sample estimates based on self-reports were less than half as large as estimates based on provider data. Men were more likely than women to overestimate their pension wealth and less likely to underestimate their wealth. Well-educated workers were more likely to underestimate their pension wealth and less likely to overestimate their pension wealth than workers with limited education. The percentage of respondents with roughly consistent estimates of wealth based on self-reports and provider data was especially high among workers with more than 20 years of job tenure and among workers who expected to retire within the next five years, while consistency between sources of pension wealth was especially low among workers with five or fewer years of job tenure.

Individual-Level Comparisons of Pension Wealth in DC Plans

Tables 5 and 6 repeat the comparisons of pension wealth estimates from self-reports and provider data for DC plans. For each table, the comparisons were restricted to workers with positive pension wealth, complete data, and exactly one DC plan (and any number of DB plans) from their current employers. As reported in the first column of Table 5, only 55 percent of the sample had complete data on self-reported DC wealth. (About 24 percent of the sample were missing data on employer contributions, 8 percent were missing data on employee contributions, 29 percent were missing data on the current account balance, and 11 percent were missing data on the eligibility age for benefits.) As with DB self-reports, response rates were higher for workers who attended college, earned high wages, and had been with their employer for many years, and among workers who expected to retire in the near future. Out of 453 respondents linked to provider data for exactly one DC plan, our sample was reduced to 267 respondents after eliminating cases with incomplete self-reports.

As reported in Table 5, median DC pension wealth estimated from provider data was $63,491, compared with $33,233 when estimated from self-reports. Both estimates are substantially smaller than the estimates of wealth in DB plans. (Recent growth in DC plans suggests that DC pension wealth at mid-life will increase substantially as future cohorts approach retirement.) The median absolute difference in wealth estimates based on self-reports and provider data was $30,854, and the median absolute percentage difference was 53 percent of provider-based wealth. At the individual level, then, DC wealth estimates were more divergent than DB estimates, when expressed as a percentage of wealth. The distribution of absolute differences in DC pension wealth estimates, reported in Table 6, also indicates that roughly the same percentage of workers had generally consistent estimates of DC wealth as had consistent estimates of DB wealth. However, wealth estimates based on self-reports were more likely to fall substantially below provider-based estimates for DC plans than DB plans. For 40 percent

TABLE 5

MEDIAN PENSION WEALTH IN DC PLANS, ESTIMATED FROM SELF-REPORTS AND PROVIDER DATA

	Percentage of Sample with Complete Self-Reports	*N*	Self-Report Estimates	Provider Estimates	Difference in Median	Median Absolute Difference	Median Absolute Percentage Difference
All observations	54.9	267	33,233	63,491	−30,258	30,854	52.6
Gender							
Male	61.0	166	44,861	81,616	−36,755	52,420	56.8
Female	55.8	101	24,588	38,664	−14,076	15,810	42.8
Education							
Did not complete high school	47.4	37	14,071	28,246	−14,175	14,821	54.7
High school graduate	57.0	90	38,140	64,631	−26,491	36,490	51.7
Some college	64.1	66	32,403	61,237	−28,834	29,983	54.7
College graduate	64.9	74	55,387	80,206	−24,819	40,541	49.3
Race							
White	61.4	237	37,127	67,787	−30,660	34,951	53.2
Non-white	44.8	30	14,764	29,321	−14,557	14,928	43.3
Age							
Age 55 and younger	59.0	144	38,920	64,349	−25,429	32,352	50.2
Age 56 and older	58.9	123	28,418	61,635	−33,217	30,854	54.3
Years to retirement							
Less than 5	60.2	56	36,770	82,813	−46,043	54,363	59.6
5–10	61.6	114	29,817	62,563	−32,746	32,879	49.7
More than 10	57.7	79	38,141	62,912	−24,771	23,639	51.3
Missing	47.4	18	34,701	52,144	−17,443	22,100	46.0
Marital Status							
Currently married	60.1	206	36,347	66,994	−30,647	35,588	53.7
Not currently married	55.5	61	28,418	42,467	−14,049	22,334	46.5
Years of job tenure							
5 or fewer	54.9	50	17,557	20,511	−2,954	6,804	34.2
5.01–15	58.3	88	32,750	51,023	−18,273	16,434	38.7
15.01–20	51.6	32	39,519	60,414	−20,895	35,961	53.9
More than 20	65.1	97	53,056	133,837	−80,781	96,967	72.3
Union status							
Member	53.3	57	30,870	55,982	−25,112	30,827	56.5
Non-member	60.7	210	36,347	64,058	−27,711	31,367	51.0
Firm size (no. of employees)							
Fewer than 500	59.3	73	23,016	56,069	−33,053	30,854	58.3
500 and over	58.8	194	38,148	70,885	−32,737	31,354	51.5
Hourly wage							
$10 and under	50.8	60	13,645	18,745	−5,100	5,500	36.2
$10.01–$15	62.6	92	31,148	58,905	−27,757	25,186	51.8
Over $15	61.2	115	64,558	120,610	−56,052	70,055	57.6

Note: The sample was restricted to current full-time wage and salar workers, ages 51 to 61, with exactly one DC plan from the current employer (but any number of DB plans), with positive pension wealth, and for whom complete self-reported and provider data were available. The absolute percentage difference was computed by dividing the absolute difference in the estimates by the provider estimate.

TABLE 6

DISTRIBUTION OF DIFFERENCES IN PENSION WEALTH ESTIMATES FOR DC PLANS

	N	Less than −50%	−50% to −25%	−25% to 25%	25% to 100%	More than 100%
All observations	267	40.4	19.9	24.0	7.5	8.2
Gender						
Male	166	45.2	16.9	21.7	5.4	10.8
Female	101	32.7	24.8	27.7	10.9	4.0
Education						
Did not complete high school	37	40.5	13.5	35.1	5.4	5.4
High school graduate	90	40.0	24.4	17.8	10.0	7.8
Some college	66	43.9	18.2	24.2	3.0	10.6
College graduate	74	37.8	18.9	25.7	9.5	8.1
Race						
White	237	40.5	19.8	22.4	8.4	8.9
Non-white	30	40.0	20.0	36.7	0.0	3.3
Age						
Age 55 and younger	144	35.4	22.2	25.0	6.3	11.1
Age 56 and older	123	46.3	17.1	22.8	8.9	4.9
Years to retirement						
Less than 5	56	50.0	14.3	17.9	10.7	7.1
5–10	114	37.7	24.6	20.2	7.9	9.6
More than 10	79	38.0	15.2	32.9	5.1	8.9
Missing	18	38.9	27.8	27.8	5.6	0.0
Marital status						
Currently married	206	41.7	19.9	21.4	8.3	8.7
Not currently married	61	36.1	19.7	32.8	4.9	6.6
Years of job tenure						
5 or fewer	50	12.0	24.0	38.0	14.0	12.0
5.01–15	88	29.5	27.3	33.0	5.7	4.5
15.01–20	32	50.0	9.4	28.1	3.1	9.4
More than 20	97	61.9	14.4	7.2	7.2	9.3
Union status						
Member	57	45.6	17.5	22.8	5.3	8.8
Non-member	210	39.0	20.5	24.3	8.1	8.1
Firm size (no. of employees)						
Fewer than 500	73	45.2	19.2	19.2	6.8	9.6
500 and over	194	38.7	20.1	25.8	7.7	7.7
Hourly wage						
$10 and under	60	18.3	23.3	35.0	11.7	11.7
$10.01–$15	92	44.6	22.8	22.8	5.4	4.3
Over $15	115	48.7	15.7	19.1	7.0	9.6

Note: Cell entries indicate the percentage of the sample for whom the percentage difference in wealth estimates between self-reports and provider data falls within the specified ranges. The percentage difference was computed by subtracting the provider estimate from the self-report estimate and dividing the difference by the provider estimate. The sample was restricted to current full-time wage and salary workers, ages 51 to 61, with exactly one DC plan from the current employer, with positive pension wealth, and for whom complete self-reported and provider data were available.

of our sample, estimates of DC wealth based on self-reports were less than half as large as estimates based on provider data.

The patterns of differences in wealth estimates across sub-groups of our sample varied markedly for DC plans and DB plans. Whereas for DB plans the

median difference in estimates as a percentage of wealth was generally smaller for groups in which the net benefits of acquiring knowledge were relatively large, these patterns were less evident for DC plans. For example, measured as a percentage of wealth, the median absolute percentage difference in estimates of DC plan wealth, reported in Table 5, did not fall with the hourly wage or years of job tenure, or rise with years until retirement. Instead, the median absolute difference rose from 34 percent of DC plan wealth for workers with five or fewer years of job tenure to 72 percent of wealth for those with more than 20 years of tenure. This pattern is inconsistent with our expectation that estimates of pension wealth from self-reports and provider data would converge as workers approach retirement.

These results cast some doubt on the relative accuracy of the provider data for DC plans. Whereas DC pension wealth estimates from self-reports were based in large part on information from workers on the size of their account balances at the time of the survey, when many of them were only a few years from retirement, estimates from provider data were computed under the assumption that contribution rates were fixed and wages followed a given trajectory during the entire period of employment. Since workers may be reasonably well-informed about their DC account balances, for which they generally receive periodic financial statements, estimates of DC wealth based on self-reports may be better than estimates based on provider data. Our failure to find convergence in estimates from self-reports and provider data as wages, education, and age increase and as retirement approaches suggests that self-reports may indeed be a superior source of information for DC plans.

Non-Response Bias in Estimates of Pension Wealth

An important concern for the estimation of wealth levels from survey data is the biases that can arise when data are missing non-randomly. If respondents who provide complete information about their asset holdings tend to have more or less wealth than respondents who refuse or are unable to provide complete information, then estimating wealth only for cases with complete data can result in seriously biased estimates. The existence of matched pension provider data provides an opportunity to examine the biases in pension wealth that can arise when self-reported data are missing non-randomly.

Table 7 reports estimates of median pension wealth based on provider data separately for respondents with complete self-reports and those with incomplete self-reports. For both DB and DC plans, provider-based estimates of pension wealth were larger for respondents with complete self-reports than for those with incomplete self-reports. For DB plans, for example, median pension wealth was only $91,344 for respondents who were missing data in their self-reports, or only 71 percent as large as median wealth for those with complete self-reports. Thus, estimating pension wealth from self-reports without imputing missing data would yield upward-biased estimates of wealth.

Estimates of Total Pension Wealth on the Current Job

To this point, our comparisons of pension wealth have been restricted to workers with complete data and exactly one DB plan or one DC plan on the

TABLE 7

ESTIMATES OF MEDIAN PENSION WEALTH BASED ON PROVIDER DATA BY PRESENCE OF COMPLETE SELF-REPORTS

	All Plans	Plans with Complete Self-Reports	Plans with Incomplete Self-Reports
DB plans			
Median wealth	110,343	127,790	91,344
N	1,128	621	507
DC plans			
Median wealth	57,595	63,491	42,839
N	453	267	186

Note: The sample was restricted to current full-time wage and salary workers, ages 51 to 61, with positive pension wealth. Estimates for DB plans were further restricted to workers with exactly one DB plan from the current employer, while estimates for DC plans were further restricted to workers with exactly one DC plan from the current employer.

current job. Although our exclusion criteria enabled us to match self-reports with provider information and make comparisons of pension wealth at the individual level, comparisons based on the restricted sample can not inform us about how estimates of total pension wealth on the current job for a random sample of full-time wage and salary workers compared for self-reports and provider data. On the one hand, excluding workers with more than one plan biases downward our estimate of median pension wealth accumulated on the current job. On the other hand, excluding workers with missing data biases upward our estimate, as documented above. We now turn to aggregate comparisons of pension wealth on the current job for all full-time wage and salary workers ages 51 to 61 with pension coverage.

Table 8 reports median pension wealth for all full-time wage and salary workers in our sample with pension coverage on the current job. Both samples were weighted by the HRS sample weights, and the provider sample was also weighted to account for the under-representation of workers in small firms and DC plans in the provider supplement. Missing data for the self-reports were imputed. For the entire sample, estimates of median pension wealth based on self-reports were similar to those based on provider data. According to self-reports, median pension wealth was $103,251, compared to $91,969 when based on provider data. The difference between the two estimates was only 12 percent of median pension wealth (based on provider data). However, differences were more substantial within certain sub-groups of the sample. For example, among men estimates of median wealth differed by $22,909, or 20 percent of median pension wealth, while among covered full-time workers who did not complete high school the difference in estimated medians was $16,244, or 41 percent of median pension wealth. Aggregate differences between estimates based on self-reports and provider data were especially large for workers with both DB and DC plans or who participated in plans that combined features of both plan types. These workers, who we describe as having combination coverage in the table, comprised 31 percent of the (unweighted) provider data sample and 27 percent of the self-reports sample. Median pension wealth for workers with combination coverage was $212,133

TABLE 8

MEDIAN PENSION WEALTH FOR FULL-TIME WAGE AND SALARY WORKERS, AGES 51–61 FROM SELF-REPORTS AND PROVIDER DATA

	Self-Reports		Provider Data			
	N	Estimated Wealth	*N*	Estimated Wealth	Difference in Median	Percentage Difference
All	3,118	103,251	2,149	91,969	11,282	12.3
Plan type						
DB only	1,351	110,545	1,018	117,818	−7,273	−6.2
DC only	931	34,472	456	38,234	−3,762	−9.8
Combination	836	212,133	675	131,635	80,498	61.2
Gender						
Male	1,803	139,465	1,241	116,556	22,909	19.7
Female	1,315	70,794	908	63,735	7,059	11.1
Education						
Did not complete high school	548	56,141	336	39,897	16,244	40.7
High school graduate	1,120	91,059	737	74,796	16,263	21.7
Some college	657	102,566	446	95,090	7,476	7.9
College graduate	793	167,440	630	171,205	−3,765	−2.2
Race						
White	2,524	105,458	1,731	93,765	11,693	12.5
Non-white	594	91,408	418	86,028	5,380	6.3
Years to retirement						
Less than 5 years	714	156,507	552	144,437	12,070	8.4
5–10 years	1,236	93,256	834	89,806	3,450	3.8
More than 10 years	832	86,826	530	73,021	13,805	18.9
Missing	336	93,944	233	74,856	19,088	25.5

Note: The sample was restricted to full-time wage and salary workers, ages 51 to 61, with pension coverage on the current job. Missing data on self-reports were imputed using hot-deck techniques. Estimates were weighted by the HRS sample weights. The pension provider estimates were also weighted to account for the under representation of workers in small firms and DC plans in the provider supplement. Combination plans included respondents with both DB and DC plans and those with a single plan that incorporated both DB and DC components. Plans were classified by type using information from respondents for the self-reports and information from providers for the provider data.

when computed from self-reported data, but only $131,635 when computed from provider data.[14]

Relative differences in median pension wealth among demographic groups do not appear to depend greatly on whether the estimates are based on self-reports or provider data. For both sources of information, median pension wealth was greater for men than women, for whites than non-whites, and for college graduates than those with less education. The observed gender and racial gaps in pension wealth were somewhat larger in the self-reports than in the provider data. For example, in the self-reports median pension wealth was only 51 percent as large for women as for men, compared to 55 percent in the provider data. However, observed educational premiums were somewhat larger in the provider data,

[14]We classified plans by type using information from respondents for the self-reports and using information from providers for the provider sample.

where median pension wealth was only 44 percent as large for high school graduates as college graduates, than in the self-reports, where median wealth was 54 percent as large for high school graduates as college graduates.

Conclusions

Estimates of pension wealth from the first wave of the HRS indicated that self-reports of future pension benefits were rarely consistent with information from pension providers. Among full-time wage and salary workers approaching retirement age with complete self-reports and provider data and with exactly one DB plan from the current employer, the absolute difference in pension wealth estimates from self-reports and provider data was less than one quarter of pension wealth for only 28 percent of workers. The median absolute difference in estimates of DB plan wealth was about 43 percent when expressed as a percentage of pension wealth, or about $52,000 when expressed in levels. Discrepancies in estimates of DC plan wealth were similarly large. Differences in pension wealth were computed only for respondents who were able (or willing) to respond to questions about future pension benefits, and these workers were presumably better informed about their pensions than those who did not provide complete responses. Fully 45 percent of workers did not provide complete answers about their plans.

Differences in median pension wealth by source of data were much smaller at the aggregate level, because positive differences in wealth between estimates from self-reports and provider data at the individual level were at least partially offset by negative differences among other individuals. For example, median pension wealth on the current job for all full-time wage and salary workers at midlife with coverage varied by only about 12 percent depending upon whether estimates were based on self-reports or provider data. Similarities between estimates at the aggregate level might suggest that self-reports can be reliable indicators of total pension wealth. However, we found that differences in aggregate estimates were more pronounced within particular sub-groups of the population, such as high school dropouts and workers who did not plan on retiring for ten or more years.

Our results underline the importance of developing techniques to properly impute missing data. Since the presence of information from linked providers gave us the opportunity to observe pension wealth for persons with missing self-reports, we were able to compare actual pension wealth for those with and without missing data. Workers with missing data had substantially lower pension wealth, suggesting that estimates based solely on cases with complete data would seriously overstate pension wealth.

Patterns of differences in estimates between self-reports and provider data across different sub-groups of our sample suggested that information from pension providers linked to the HRS were more accurate than self-reports for DB plans. We found that estimates from self-reports and provider data tended to converge slowly as years of education, age, and the wage level increased and as expected years to retirement decreased. For workers for whom the acquisition of information about pension plans was easier (because they were better educated)

or more important (because pension wealth was larger or retirement nearer), self-reports were more similar to information from providers than for workers for whom the acquisition of pension information was difficult or less important. The absence of these patterns for DC plans suggests that information from DC plan providers may be less accurate than self-reports. Thus, the best method of computing pension wealth may be to estimate DB plan wealth based on provider data and to estimate DC plan wealth based on self-reports.

Our findings suggest that few workers are well informed about their future pension benefits. Only 55 percent of workers with pension coverage provided complete answers to questions about their pension plans, and those who did respond fully generally gave information that was inconsistent with data from pension providers. Many workers were even misinformed about the type of plans they had. Almost one in six workers linked to DB plan data from providers reported participating only in plans in which money was accumulated in separate accounts for them, while more than one in three workers linked to DC plan data from providers reported participating only in plans in which benefits were based on formulas involving age, years of service, and salary. Worker ignorance about pension plans is particularly disturbing at this time, when employers and policymakers are increasingly shifting responsibility for financial retirement planning to individual workers. As DC plans continue to grow in popularity, many workers will have to make their own decisions about how to invest pension savings. If Congress chooses to create individual Social Security accounts, as many advocate, workers will also become responsible for investing their own Social Security funds. In light of our findings that workers are not well informed about their retirement plans, workers need to be better educated about retirement saving before they can assume these new responsibilities, particularly those with limited education who especially appear to lack information about their pensions.

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