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The Pension Factor 2012

The Role of Defined Benefit Pensions in Reducing Elder Economic Hardships

by Frank Porell, Ph.D. and Diane Oakley

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EXECUTIVE SUMMARY

Recent turmoil in financial markets has substantially reduced the retirement savings of many workers and retirees alike. This has heightened public concerns that many older American households will not accumulate sufficient retirement savings to meet their needs in retirement. Fortunately, about half of older American households count on income from a defined benefit (DB) pension.

The predictable monthly benefits provided by DB plans remain a source of security to these retired households, enabling millions of Americans to remain secure and independent in old age. This study analyzes the contribution of DB pensions to the economic security of older American households.

The Pension Factor 2012 – an update of a similar study conducted in 2009 – finds that DB pension income continues to play a vital role in reducing the risk of poverty and material hardships among older Americans. **Rates of poverty among older households without DB pension income were approximately nine times greater than the rates among older households with DB pension income in 2010, up from six times greater in 2006.** Older households with DB pension income also were far less likely to experience food, shelter, and health care hardships. In addition, DB pension recipient households were less reliant on means-tested cash and non-cash public assistance.

While households with DB pension income generally fared better than households without pension income, DB pensions appear to have particularly improved the economic security of more vulnerable subpopulations of elder households. Our analysis suggests that common gender and racial disparities in rates of poverty, material hardships, and dependence on public assistance are greatly diminished, and in some cases nearly eliminated, among households receiving DB pension income. Even after controlling for a range of socio-demographic factors such as education, race, gender, and work history, we find that households with a pension fare better than those without. In

other words, DB pensions appear to exert an independent, positive effect on older Americans' economic well-being – an effect we call the “pension factor.”

This “pension factor” has helped substantial numbers of older American households avoid material hardships associated with inadequate food, shelter, and health care and to avoid having to rely on public assistance. More specifically, we estimate that in 2010, DB pension receipt among older American households was associated with:

- 4.7 million fewer poor and near-poor households
- 460,000 fewer households that experienced a food insecurity hardship
- 500,000 fewer households that experienced a shelter hardship
- 510,000 fewer households that experienced a health care hardship
- 1.22 million fewer households receiving means-tested public assistance

Furthermore, not counting Medicaid reimbursements for acute and long-term medical care, we estimate that in 2010 **governments spent about \$7.9 billion dollars less on public assistance to older households because of their DB pension income.** This represents about 6.4 percent of aggregate public assistance dollars received by all American households in 2010 from similar benefit programs. This amount is substantial, particularly in light of the increased demand placed on the resources of government safety net programs throughout the country in recent years.

More broadly, the study also finds:

- a continued decrease in rates of DB pension income receipt likely related to more than three decades of declining DB plan participation rates among active employees.
- increasing fractions of older American workers will be entering retirement without the security of a DB pension in the future.
- older households with DB pension income generally fared better during the recent economic turmoil relative to households without such income.
- income from pensions may be especially important to middle income American households.
- lower rates of DB pension receipt are found among older persons living in the West and South relative to other regions.
- pensions have helped many older minority and female-headed households escape poverty.

INTRODUCTION

Traditional defined benefit (DB) pension plans have long been an important source of income for older households seeking to maintain a middle-class standard of living after a lifetime of work. Employees with pension plans can accumulate greater retirement wealth with a traditional DB plan relative to a defined contribution (DC) plan because they do not face complex decisions about whether to participate, how much to save, and how to invest or draw down their savings.

Under DC benefit plans, employers and/or employees generally make regular tax-deferred contributions to portable employee-owned and controlled retirement accounts that are typically invested in financial markets with potentially volatile rates of return. For example, on average 401(k) retirement account balances fell by nearly 28 percent in 2008 and increased by almost 32 percent in 2009.¹ In addition, since it is under their own control, individuals can often borrow against their DC retirement accounts. In 2009, about 21 percent of 401(k) participants eligible for loans had an outstanding loan against their 401(k) accounts that averaged about 15 percent of the account balance.² DB pension wealth is well-protected against such pre-retirement withdrawals. Lastly, individuals with DC plan accounts must also manage the risk associated with prematurely spending down their retirement savings. Retirees with traditional DB plans not only receive a guaranteed regular stream of income after retirement that continues until death, but surviving spouses have continued access to all or a portion

of the income stream until their own deaths. Private sector pensions also are guaranteed by the Pension Benefit Guaranty Corporation. Because of these features of DB pension plans, older American households with DB pension income should have greater economic security than their counterparts without such income.

A previous study of the National Institute on Retirement Security entitled, “The Pension Factor,”³ found that DB pension income plays a critical role in reducing the risk of poverty and hardship among older Americans. For example, poverty rates among older households without pension income were about six times greater than those among households with pension income. Pension income also reduced – and in some cases eliminated – the greater risk of poverty and dependence on public assistance among women and minority populations. Finally, analyses indicated that several million fewer households were poor or near poor, several hundred thousand

fewer households experienced material hardships, and over one million fewer older households received means-tested public assistance in 2006 because of their DB pension income.

The purpose of this study is to update this earlier research in light of the near collapse of the world financial markets in 2008. This financial crisis created a deep economic recession that resulted in losses of about 5.5 million jobs, \$360 billion in wages, and \$1.6 trillion in real estate wealth during the fifteen months that followed the peak of the crisis in September 2008.⁴ In this study, the role of DB pension income in reducing elder hardships is re-examined in 2010 with the same data sources as the previous study. In addition to providing some general insights about how older Americans were adversely affected by the 2008 financial crisis, the study's key findings show that older households with DB pension income were better protected from post-financial crisis poverty and economic hardships than their counterparts without pension income.

Data Source and Study Sample

The study data were drawn from the 2004 and 2008 panels of the Survey of Income and Program Participation (SIPP). SIPP Panel members, who comprise a representative national sample of the non-institutionalized civilian population, are asked a common core set of questions at four-month time intervals over a 3-4 year time span. A series of topical modules containing additional questions on specific topics, such as pension plan coverage and adult well-being, are only asked at one or two specific interviews over the course of several years. The 2004 and 2008 SIPP panel data used in this study were actually reported by individuals in 2006 or 2010, respectively. Two study samples were selected. The first included all SIPP respondents age 60 years or older. The second included all households with a householder age 60 or older. Additional details about the selection of the study sample and analytic data file construction are contained in the Technical Appendix.

PENSIONS REMAIN AN IMPORTANT SOURCE OF INCOME FOR RETIREES

Table 1 contains descriptive statistics about persons who have received DB pension income, how much they received, and how the amounts changed between 1998 and 2010 after adjustments for inflation. Receipt of a DB pension is defined here as receiving regular pension income from a former employer for reasons of retirement, disability, or survivorship that is expected to last for the remainder of one's life.

Lump sum pension distributions are not counted as DB pension income. According to these data, about 28% of persons age 60 or older in the U.S. received DB pension income from a former employer of their own in 2010. The mean and median annual pension amounts received in 2010 were about \$19,427 and \$14,400, respectively.

When the definition of pension receipt is expanded to include

persons receiving DB pension income from survivor benefits and persons who benefit from the DB pension income received by their current spouse, the 2010 estimated rate of DB pension receipt increases to 42.8% of persons age 60 or older, with mean and median annual pension amounts received per recipient of \$20,943 and \$14,403, respectively. The higher amounts under this broader definition of DB pension receipt are the result of counting both pension incomes of dual-recipient married couples.

Figure 1: Persons 60 and Older with Income from Own or Spouse's DB Pension

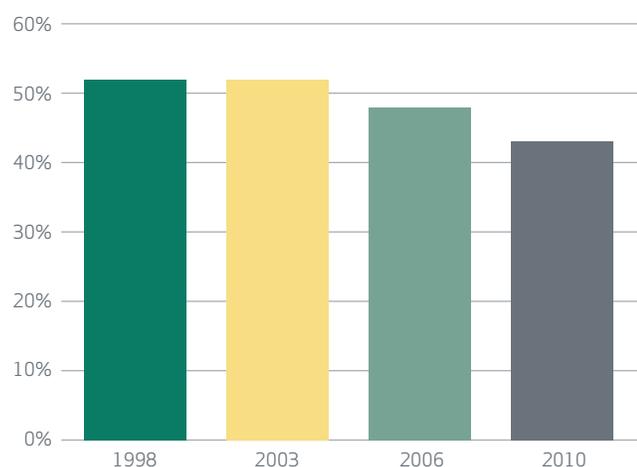


Figure 1 illustrates that the rate of DB pension receipt in 2010 was lowest in the study period. Decreases in rates of DB pension income receipt in both 2006 and 2010 suggest the start of a downward trend in receipt rates that likely stems from more than three decades of declining private DB plan participation rates among active employees. Whereas 38 percent of private sector employees participated in a DB plan in 1979, only 15 percent of employees did so in 2009.⁵ DB plan participation rates also declined among public sector employees over the same time period, albeit more modestly. Whether these data on DB pension receipt are indicative of long-term trend cannot be determined without additional data, but given the long history of declining DB plan participation rates among American workers, the 2010 data suggest that increasing fractions of older American workers will be entering retirement without the security of a DB pension in the future. It should also be noted, however, that the mean and median annual amounts received from DB pensions have continually increased since 1998. Pension amounts increased in 2010 relative to 2006 despite the 2008 financial crisis.

Table 1: Persons Age 60 or Older with DB Pension Income; 1998, 2003, 2006, and 2010

		Persons Age 60 or Older with DB Pension Income from Own Former Employer	Persons Age 60 or Older with DB Pension Income from Own or Spouse's Former Employer
2010	Percent of Persons with DB Income	28.0%	42.8%
	Mean Pension Amount ^a	\$19,427	\$20,943
	Median Pension Amount ^a	\$14,400	\$14,403
2006	Percent of Persons with DB Income	31.5%	48.2%
	Mean Pension Amount	\$17,353	\$20,003
	Median Pension Amount	\$12,607	\$13,720
2003	Percent of Persons with DB Income	34.1%	51.8%
	Mean Pension Amount	\$16,042	\$18,645
	Median Pension Amount	\$11,518	\$13,473
1998	Percent of Persons with DB Income	33.5%	51.8%
	Mean Pension Amount	\$14,278	\$16,157
	Median Pension Amount	\$10,177	\$11,657

Source: Tabulations are from the 1996, 2001, 2004, and 2008 SIPP.

a All dollars are in 2010 dollars.

Table 2:
Persons Age 60 or Older with DB Pension Income by Selected Characteristics, 2010

	Number (millions)	DB Pension from Own Former Employer			DB Pension from Own or Spouse's Former Employer		
		Percent	Mean Pension Amount ^a	Median Pension Amount	Percent	Mean Pension Amount	Median Pension Amount
All	55.2	28.0%	\$19,427	\$14,400	42.8%	\$20,943	\$14,403
Gender							
Male	24.7	37.1%	\$22,238	\$17,412	44.0%	\$23,535	\$17,856
Female	30.5	20.6%	\$15,307	\$10,944	41.8%	\$18,729	\$12,000
Race/Ethnicity							
Non-Hispanic White	43.8	29.8%	\$19,654	\$14,403	45.8%	\$21,195	\$14,521
Non-Hispanic Black	4.9	28.1%	\$18,986	\$14,400	39.6%	\$20,120	\$15,516
Hispanic	3.8	14.4%	\$16,623	\$11,160	22.5%	\$17,493	\$10,800
Other Race/Ethnicity	2.7	18.4%	\$17,744	\$14,232	27.3%	\$20,259	\$16,080
Annual Household Income^b							
Lowest Quintile	11.0	11.3%	\$4,421	\$2,845	16.9%	\$3,349	\$1,920
2nd Quintile	13.8	27.2%	\$10,285	\$8,798	43.0%	\$8,680	\$6,996
3rd Quintile	12.9	36.0%	\$17,877	\$15,720	55.4%	\$18,446	\$17,296
4th Quintile	10.4	36.1%	\$26,396	\$24,000	54.5%	\$31,264	\$30,516
Highest Quintile	7.1	28.8%	\$36,030	\$32,340	42.0%	\$42,668	\$36,000

Source: Tabulations are from the 2008 SIPP. Totals may not add up due to rounding.

a All dollars are in 2010 dollars.

b Quintile ranges are those reported by the U.S. Bureau of the Census for households with heads of all ages. Quintile boundaries (lowest to highest) are: \$20,000; \$38,040; \$61,720; \$100,065.

Characteristics of DB Pension Income Recipients in 2010

Table 2 shows how rates of DB pension income receipt varied with selected characteristics of older Americans in 2010. While DB receipt rates were lower overall in 2010 than in 2006, the *relative* rates of DB pension income receipt among subgroups of older persons are similar to those reported for 2006. Reflecting historical higher rates of labor force participation and wages, older men are nearly twice as likely as women to report DB pension income from a former employer (37.1% vs 20.6%). The mean annual pension amount received from a former employer among older men of \$22,238 is also more than 45% greater than the mean of \$15,307 among women. When spousal sources of pension income are counted in the broader definition of DB pension receipt, there is only a modest reduction in the gender disparity in pension amounts received. However, the 16.5 percentage point gender disparity in DB pension receipt is nearly eliminated, leaving only a 2.2 percentage point disparity (44.0% vs 41.8%). About two-thirds of marginal increase in the rate of DB pension receipt among women under the broader definition is due to marriage to a current DB pension recipient, with the remaining one-third due to DB pension survivor benefits. These data suggest the greater importance of spousal DB pension income to older women relative to men.

Table 2 also shows notable racial/ethnic disparities in rates of DB pension income receipt among older Americans. When DB pension receipt is based only on income from one's own former employer, rates of pension receipt among older non-Hispanic White and Blacks were similar (29.8% vs 28.1%). These rates were about twice as high as the 14.4 percent of older Hispanic persons receiving DB pension income from a former employer. In contrast to what is found for gender disparities, when spousal sources of DB pension income are counted, the White-Black racial disparity in DB pension receipt widens (45.8% vs 39.6%). The 15.4 percentage point White-Hispanic disparity in DB pension receipt rates from one's own employer is increased to 23.3 percentage points when spousal sources of DB income are counted. These data suggest that there may be disproportionately more married persons and persons with DB survivor benefits among White relative to Black and Hispanic older persons. While pension income amounts received by older White persons exceeded those for all other race/ethnic groups, the race/ethnic

disparities in pension income amounts are relatively much smaller than those for receipt rates.

When pension receipt rates are displayed by household income quintile, they show that older persons with lowest household incomes are least likely to have DB pension income and, on average, receive the smallest pension amounts. Similar to previous research,⁶ these data suggest that DB pension income is a particularly important income component for older persons with middle to higher household incomes. Whereas mean and median pension amounts received increase monotonically from the lowest to the highest household income quartiles, rates of DB pension income receipt are highest among older persons in the third and fourth quintiles of the national distribution of annual household income. This suggests that DB pension income may be especially important to middle income American households.

Geographic Variations in DB Pension Receipt

Table 3 contains data on the geographic variations in rates of DB pension receipt among regions and selected states. Although regional disparities are generally fairly modest, lower rates of DB pension receipt are found among older persons living in the West and South relative to other regions. While lower historical rates of unionization in the South probably contribute to its lower rate of pension receipt, regional differences in racial/ethnic composition of the older population are also likely to be a factor, particularly in the West. SIPP data show that about 23 percent and 11 percent of older persons were either Hispanic or Other Race in the West and South regions, respectively, and Table 2 shows that pension receipt rates were much lower among these two subgroups of older persons.⁷ An examination of DB pension receipt rates for individual states shows that receipt rates were highest among older persons living in the states of Michigan, Indiana, Ohio and Maryland. The lowest receipt rates were among older persons in Florida and California. Industrial states, characterized by histories of heavy concentrations of unionized manufacturing jobs, such as Michigan and Indiana, tend to have higher rates of DB pension receipt. On the other hand, public sector pensions account for the high DB income receipt rate in Maryland, a state where many former and current federal government employees live.⁸

Table 3: Geographic Variations: Rates of DB Pension Receipt in 2010 for Census Regions and Selected States^a

Geographic Area	Number of Persons (in 1,000s) ^a	Percent of Persons with DB Pension Income from Own Former Employer	Percent of Persons with DB Pension Income from Own or Spouse's Former Employer
United States	55,160	28.0%	42.8%
Northeast	10,690	30.1%	43.7%
Massachusetts	1,251	28.3%	41.2%
New Jersey	1,517	29.8%	40.7%
New York	3,601	31.1%	42.6%
Pennsylvania	2,713	31.8%	49.1%
Midwest	12,470	29.9%	47.2%
Illinois	2,095	26.1%	42.5%
Indiana	1,171	34.3%	53.7%
Michigan	1,863	36.0%	55.9%
Minnesota	978	31.1%	43.8%
Missouri	1,151	27.2%	42.9%
Ohio	2,330	31.4%	53.0%
Wisconsin	1,108	28.6%	43.9%
South	20,360	27.0%	41.1%
Alabama	939	27.3%	38.9%
Florida	3,970	23.9%	35.3%
Georgia	1,551	29.6%	40.2%
Maryland	938	36.0%	52.8%
North Carolina	1,662	26.9%	42.1%
South Carolina	935	32.0%	48.9%
Tennessee	1,214	26.6%	42.5%
Texas	3,601	23.8%	37.5%
Virginia	1,241	30.5%	49.1%
West	11,640	25.9%	40.1%
Arizona	657	24.2%	45.5%
California	5,636	23.5%	35.7%
Washington	1,108	28.3%	44.8%

Source: Tabulations from the 2008 SIPP.

a Receipt rates are only reported for individual states in which there were at least 250 SIPP respondents age 60 years and older.

Sources of Pension Income and Other Types of Retirement Income

Private and Public DB Pension Income

The top of Table 4 shows the number of older persons with private and public DB pension income and the amounts received for both 2006 and 2010. Public pensions include civilian and military federal government, state government, and local government. Private pensions include company, union, and other nongovernment retirement pensions.

While rates of pension receipt declined between 2006 and 2010, there were modest increases in the number of older persons with DB pension income due to an increase of about 6.6 million older persons nationally over four years. While recipients of private DB pension income greatly outnumbered public DB pension recipients in both 2006 and 2010, the number of older persons with pension income from a former private employer or from both a private and public former employer declined by more than 300,000 over those four years. Private pension coverage as a percent of the total US population declined from 20.1% to 16.6%, while public sector coverage remained relatively stable at 9.2% and 9.1% in

Table 4: **DB, DC, and Social Security Income Recipients and Amounts for Persons Age 60 or Older in 2006 and 2010**

	Persons in 2006 (millions)	Percent of Persons	Mean Annual Amount ^a	Median Annual Amount	Persons in 2010 (millions) ^b	Percent of Persons	Mean Annual Amount ^a	Median Annual Amount
DB Pension Income								
Own Former Employer	15.3	31.5%	\$17,353	\$12,607	15.4	28.0%	\$19,427	\$14,400
Private Sector Employer Only	9.7	20.1%	\$12,294	\$8,757	9.2	16.6%	\$13,301	\$9,593
Public Sector Employer Only	4.5	9.2%	\$24,094	\$20,889	5.0	9.1%	\$26,199	\$22,853
Both Public and Private	1.1	2.2%	\$35,255	\$29,280	1.3	2.3%	\$36,838	\$30,462
Own or Spouse's Former Employer	23.4	48.2%	\$20,003	\$13,720	23.6	42.8%	\$20,943	\$14,402
Private Sector Employer Only	12.9	26.6%	\$13,503	\$9,608	13.7	24.9%	\$16,982	\$11,991
Public Sector Employer Only	5.4	11.1%	\$27,628	\$23,029	6.9	12.5%	\$33,230	\$27,606
Both Public and Private	5.1	5.0%	\$37,851	\$32,071	3.0	5.4%	\$41,717	\$33,454
DC Income								
Own	7.4	15.3%	\$7,907	\$3,298	7.1	12.8%	\$7,627	\$3,490
Own or Spouse's	9.9	20.5%	\$9,764	\$4,398	9.5	17.2%	\$9,247	\$4,208
Social Security Income								
Own	37.6	77.4%	\$13,154	\$13,234	40.3	73.1%	\$12,927	\$12,852
Own or Spouse's	39.7	81.6%	\$18,207	\$17,060	43.0	78.0%	\$18,325	\$16,803

Source: Analysis of data from the 2004 and 2008 SIPP. Totals may not add up due to rounding.

a All dollars are in 2010 dollars.

2006 and 2010, respectively. This absolute decline in pension recipient benefits in all or part of the private sector is a major factor contributing to the overall decline in pension receipt rates between 2006 and 2010.

Because much of the public sector does not receive Social Security, wages are lower and DB pension recipients generally received far greater annual pension income than their private DB pension recipient counterparts in both 2006 and 2010. There was little change in the relative levels of public and private pension payments. The mean and median annual amounts of pension income of \$26,199 and \$22,853 among recipients with only public pensions were greater than the mean (\$13,301) and median (\$9,593) amounts received by DB pension recipients with only private pensions which is similar to 2006. In both years, the relatively small pool of DB pension recipients with both private and public pensions received much larger pension incomes than their counterparts with only public or private pension income, even when pension receipt is based solely upon one's own former employment. When spousal sources of pension income are also considered, there is a modest increase in the disparity between private and public pension amounts received by recipients. The greater retirement income received by public relative to private DB pension recipients has been attributed to several factors, such as lower job turnover and longer employment tenure, differing occupational mix and higher education levels, and lower overall compensation among public sector employees.⁹ Additionally, as many as 30 percent of state and local workers are not covered by Social Security. These employees generally receive higher pension benefits to make up for the lack of Social Security benefits in retirement.¹⁰

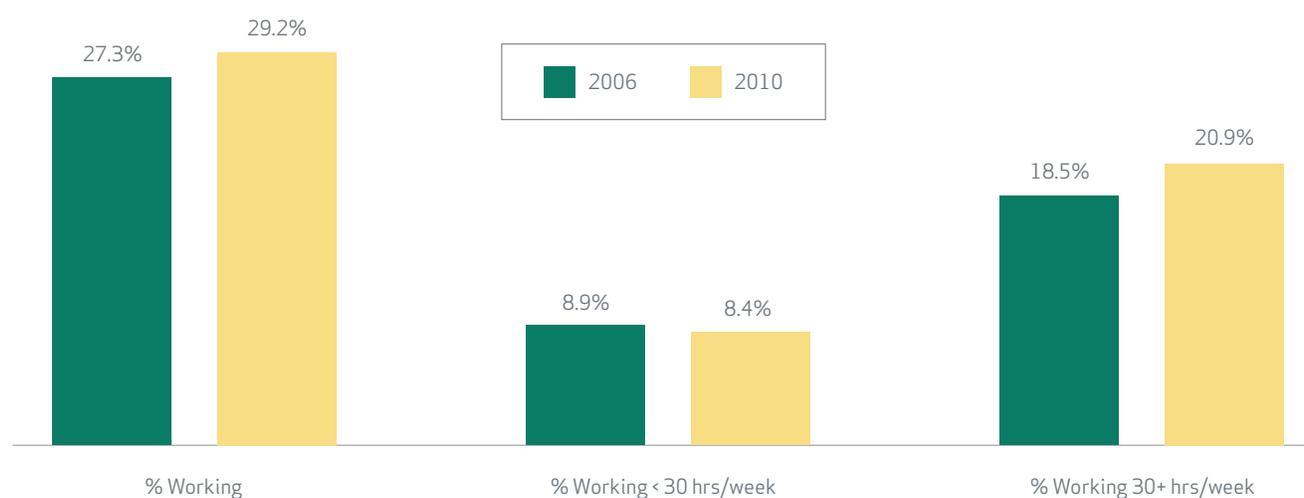
Pension Income Compared to Other Retirement Income

Table 4 also contains comparative data on receipt rates and lifetime income amounts received from defined contribution (DC) plans and Social Security (SS) income for older persons in 2006 and 2010.¹¹ These data show that in both years DC income receipt rates were far lower than receipt rates of both

DB and Social Security income, and the rate of Social Security income receipt was highest by far among the three sources of retirement income. When public/private sources are not distinguished, the median annual income received was lowest for DC income recipients and highest for Social Security income recipients. The mean annual DC income received remains the lowest, but the rankings between mean annual Social Security and DB pension income are reversed.¹² This latter reversal of rankings is attributable to relatively small numbers of DB income recipients who receive larger pension incomes, which drives up the mean income amount but not the median.¹³

A comparison of 2006 and 2010 data shows that receipt rates of all three types of retirement income fell between 2006 and 2010. The approximate 2-4 percentage point declines in DC income receipt rates were a little lower than the 3-5 percentage point declines in both DB pension and Social Security income receipt. One factor that likely contributed to these declines in retirement income receipt generally is a higher employment rate among older persons in 2010 than in 2006. SIPP data in Figure 1 show that the percentage of persons 60 years or older who were employed increased by almost 2 percentage points over the four years, rising from 27.3 percent in 2006 to 29.2 percent in 2010. While the percentage of older persons working less than 30 hours per week declined from 8.9 percent in 2006 to 8.4 percent in 2010, the percentage of older persons working at least 30 hours per week increased from 18.5 percent to 20.9 percent over the same time period. While the reasons for the increase in employment rates among older persons cannot be discerned from the study data, it is plausible that many older persons may have delayed their retirement to compensate for job and/or wealth losses associated with the 2008 financial crisis.¹⁴ Lastly, there were modest increases and decreases in inflation-adjusted Social Security and DC income received between 2006 and 2010 depending upon whether spousal pension income is counted or not and whether the mean or median is used as a yardstick. In contrast there were consistent modest increases in both the mean and median inflation-adjusted DB pension income amounts received between 2006 and 2010 regardless of spousal pension receipt.

Figure 2: **Employment Status of Older Householders in 2006 and 2010**



HOUSEHOLDS WITH PENSION INCOME FACE FEWER RISKS OF POVERTY AND HARDSHIP

We now turn our attention to the economic welfare of older American households with DB pension income relative to other households. Similar to our earlier study, annual household income relative to the federal poverty level (FPL) is used as one yardstick for measuring economic well-being.

Because conventional poverty-level measures have a number of acknowledged limitations,¹⁵ we also employ direct measures of material hardships that are derived from self-reports of consumption patterns and physical living conditions judged to be inadequate by societal standards. Despite some shortcomings of their own,¹⁶ material hardship measures provide a tangible picture of the consequences of inadequate economic resources, and are regarded as useful supplements to FPL indicators for assessing economic well-being.¹⁷ In Tables 5 and 6 below, we compare not only poverty rates, but also rates of selected material hardships among households with and without DB pension income. Since FPL thresholds of the U.S. Bureau of the Census are measured for families and SIPP questions on material hardships refer to households, we analyzed data for households with a householder age 60 or older rather than individual older persons.¹⁸

Poverty Rates

Table 5 shows how poverty rates varied among older households with DB pension receipt status and by selected characteristics of the householder in 2010. Households with incomes below the FPL are classified as “poor.” Households with incomes exceeding the FPL but less than or equal to 200% of the FPL are classified as “near-poor,” while households with incomes exceeding 200% of the FPL are classified as “not-poor.” DB pension receipt pertains to both the householder and his/her spouse. In 2010 about 9.7 percent of American households with householders aged 60 or older were poor, and another 24.2 percent of them were near-poor. The poverty rate is much lower among older households with DB pension income relative to their counterparts with no DB pension income. The poverty rate of 15.5 percent among older households without

Table 5: Economic Welfare Comparisons: Percentages of Older Households with Household Incomes Exceeding Poverty Thresholds by DB Pension Income Status and Other Selected Characteristics, 2010

	Number (millions)	Percent of Households with Annual Income Classified as:		
		Poor ^a	Near Poor ^a	Not Poor ^a
All Households	35.4	9.7%	24.2%	66.1%
With Own or Spouse Pension Income	14.9	1.7%	14.7%	83.6%
No Pension Income	20.4	15.5%	31.2%	53.2%
Gender of Householder				
Male				
With Own or Spouse Pension Income	6.9	1.3%	8.8%	89.9%
No Pension Income	8.7	11.7%	26.3%	62.1%
Female				
With Own or Spouse Pension Income	8.1	2.0%	19.7%	78.3%
No Pension Income	11.7	18.4%	34.9%	46.7%
Race/Ethnicity				
Non-Hispanic White				
With Own or Spouse Pension Income	12.7	1.5%	13.5%	85.0%
No Pension Income	15.6	12.4%	31.1%	56.5%
Non-Hispanic Black				
With Own or Spouse Pension Income	2.1	2.9%	22.0%	75.0%
No Pension Income	1.8	26.9%	35.0%	38.1%
Hispanic				
With Own or Spouse Pension Income	0.5	2.2%	24.0%	73.8%
No Pension Income	1.6	25.4%	29.0%	45.6%
Other Race/Ethnicity				
With Own or Spouse Pension Income	1.0	2.7%	14.4%	82.9%
No Pension Income	2.0	23.7%	28.8%	47.5%

Source: Tabulations are from the 2008 SIPP, Wave 6 Core File and Retirement and Pension Coverage Topical Module 3. Totals may not add up due to rounding.

a Poor: Annual Household Income below Federal Poverty Level (Income \leq FPL); Near Poor: (FPL $<$ Income \leq 200% FPL); Not Poor: (Income $>$ 200% FPL).

Table 6: Material Hardship Comparisons: Percentages of Older Households Reporting Food, Shelter, and Health Care Material Hardships by DB Pension Income Status and Other Selected Characteristics, 2010

	Number (millions)	Percent of Households Reporting:		
		Food Insecurity Hardship ^a	One or More Shelter Hardship ^a	One or More Health Care Hardship ^a
All Households	35.4	6.2%	5.9%	7.0%
With Own or Spouse Pension Income	14.9	3.5%	3.0%	4.3%
No Pension Income	20.4	8.2%	8.0%	9.1%
Gender of Householder				
Male				
With Own or Spouse Pension Income	6.9	2.9%	3.0%	4.0%
No Pension Income	8.7	7.6%	7.0%	7.8%
Female				
With Own or Spouse Pension Income	8.1	4.1%	3.0%	4.6%
No Pension Income	11.7	8.7%	8.8%	10.0%
Race/Ethnicity				
Non-Hispanic White				
With Own or Spouse Pension Income	12.7	2.8%	2.1%	3.8%
No Pension Income	15.6	6.3%	5.8%	8.4%
Non-Hispanic Black				
With Own or Spouse Pension Income	2.1	7.7%	10.0%	7.4%
No Pension Income	1.8	15.9%	20.0%	11.4%
Hispanic				
With Own or Spouse Pension Income	0.5	8.8%	4.0%	6.4%
No Pension Income	1.6	15.5%	12.0%	11.4%
Other Race/Ethnicity				
With Own or Spouse Pension Income	1.0	7.3%	6.1%	8.0%
No Pension Income	2.0	10.1%	10.2%	10.1%
Annual Household Income^b				
Low Income				
With Own or Spouse Pension Income	1.7	6.3%	3.4%	5.8%
No Pension Income	7.7	12.0%	11.1%	11.9%
Middle Income				
With Own or Spouse Pension Income	11.8	3.4%	3.1%	4.3%
No Pension Income	10.7	6.4%	6.6%	8.1%
High Income				
With Own or Spouse Pension Income	1.5	1.5%	1.9%	2.6%
No Pension Income	2.0	2.8%	4.0%	3.5%

Source: Tabulations from the 2008 SIPP, Wave 6 Core File and Retirement and Pension Coverage Topical Module 3. Totals may not add up due to rounding.

a See Technical Appendix for definitions of food, shelter, and health care hardship indices.

b Income classification is based on annual household income and quintiles of the distribution of annual income for households of all ages in 2010. Low Income = Quintile 1, Middle Income = Quintiles 2-4, and High Income = Quintile 5.

any DB pension income exceeded the 1.7 percent rate among households with DB pension income by more than a factor of nine (Figure 3). Furthermore, the 31.2 percent rate of near-poverty among households without DB pension income is more than double the near-poverty rate of 14.7 percent found for their counterparts with DB pension income.

Table 5 shows large gender and racial disparities in poverty rates among older American households. Older households headed by women generally exhibit higher poverty rates than those headed by men with the same DB pension status.¹⁹ Likewise, older non-Hispanic White households have much lower poverty rates than households of other race/ethnic status with the same DB pension status. However, many of these disparities are substantially reduced and nearly eliminated among households with DB pension income. The 6.7 percentage point female disparity in the percentage of poor households without DB pension income (18.4 percent vs 11.7 percent) is nearly eliminated among households with DB pension income (i.e., 2.0 percent vs 1.3 percent). Furthermore, the double-digit percentage point racial disparities in poverty rates between White households and non-White households without DB pension income (12.4 percent for Whites vs 23.7 to 26.9 percent for non-White households) are reduced to disparities of less than 2 percentage points among households with DB pension income (1.5 percent for Whites vs 2.2 to 2.9 percent for non-Whites). These data suggest that DB pensions have helped many older minority and female-headed households to escape poverty as defined by the FPL.

Households with Pensions Face Fewer Material Hardships

We analyzed three types of material hardship indicators of economic welfare: inadequate food consumption, inability to meet basic expenses associated with shelter, and unmet medical or dental needs. Hardships associated with inadequate food consumption were measured from SIPP questions that were used in a food security scale formerly used by the U.S. Department of Agriculture (USDA).²⁰ The scale is derived from responses to five questions about food-related hardships experienced due to lack of money over the last four months: (1) food we bought didn't last, (2) couldn't afford balanced meals, (3) cut size or skipped meals, (4) ate less than felt needed, and (5) didn't eat for a whole day. Households with two or more responses of "yes," "often," or "sometimes" are classified as experiencing a *food insecurity hardship*.²¹ Households reporting that they were unable to pay the full amount of the rent or

mortgage, or the full amount of gas, oil, electricity, or telephone utility bills, are classified as having experienced a *shelter expense hardship*. Although the vast majority of Americans 65 years and older are entitled under Medicare, most dental services and some medical expenses are not covered by Medicare and out-of-pocket costs for deductibles and co-payments can impose a strain on household budgets. Households are defined as having experienced a *health care hardship* if they reported that in the past year one or more household members did not see a doctor or dentist when there was a need to see one.

Table 6 shows that about 6.2 percent of older American households in 2010 experienced a food insecurity hardship, an increase from the 4.7 percent rate that was found in 2006. Rates of food insecurity hardships differ widely among subpopulations of older households. The estimated rate of food insecurity hardships among older households without DB pension income (8.2 percent) is about 2.3 times greater than that of their counterparts with DB pension income (3.5 percent). Even when households are stratified by income class, rates of food insecurity hardships are lower among households with DB pension income relative to their counterparts without such income. The data also suggest that there are substantial reductions in some racial/ethnic disparities among households receiving DB pension income. For example, the Black-White racial disparity in the rate of food insecurity hardship of nearly 9.6 percentage points (15.9 percent vs 6.3 percent) among households without DB pension income is nearly halved to 4.9 percentage points (7.7 percent vs 2.8 percent) among households with DB pension income.

Table 6 also displays rates of shelter expense and health care hardships in 2010. Whereas about 4.6 percent of older American households reported a shelter hardship in 2006, this number increased to about 5.9 percent in 2010. Rates of health care hardships among older households also increased between 2006 and 2010, from about 6 percent to roughly 7 percent. Rates of shelter and medical hardships were both consistently lower among households with DB pension income relative to their counterparts without such income. Only about 3 percent of households with DB pension income experienced a shelter expense hardship in 2010 relative to an 8 percent rate among households without DB pension income. The 9.1% rate of health care hardships among older households without DB pension income was more than double the 4.3% rate among DB pension recipient households. Although the differences are smaller in magnitude, lower rates of both types of hardships are found among DB pension recipient households when households are stratified into income classes.

Table 7: Public Assistance Receipt: Percentages of Older Households Receiving Public Assistance and Dollar Amounts of Assistance by DB Pension Income Status and Other Selected Characteristics, 2010

	Number (millions) ^{a,b}	Percent Receiving Public Assistance	Mean Amount Received ^a	Median Amount Received ^a
All Households	35.4	11.4%	\$6,494	\$4,224
With Own or Spouse Pension Income	14.9	4.7%	\$7,211	\$4,269
No Pension Income	20.4	16.4%	\$6,342	\$4,197
Gender of Householder				
Male				
With Own or Spouse Pension Income	6.9	4.3%	\$8,161	\$5,374
No Pension Income	8.7	12.7%	\$6,829	\$4,636
Female				
With Own or Spouse Pension Income	8.1	5.0%	\$6,514	\$3,417
No Pension Income	11.7	19.0%	\$6,100	\$3,921
Race/Ethnicity				
Non-Hispanic White				
With Own or Spouse Pension Income	12.7	3.7%	\$7,318	\$4,416
No Pension Income	15.6	10.9%	\$5,831	\$3,312
Non-Hispanic Black				
With Own or Spouse Pension Income	2.1	10.4%	\$5,974	\$4,596
No Pension Income	1.8	35.3%	\$6,318	\$4,461
Hispanic				
With Own or Spouse Pension Income ^c	0.5	9.8%	\$8,641	\$2,280
No Pension Income	1.6	33.9%	\$6,787	\$5,760
Other Race/Ethnicity				
With Own or Spouse Pension Income ^c	1.0	12.2%	\$8,065	\$3,000
No Pension Income	2.0	31.8%	\$8,328	\$7,492

Source: Tabulations from the 2008 SIPP. Totals may not add up due to rounding.

a All dollars are expressed in 2010 dollars.

b Caution must be exercised for these estimates since they are based on less than 50 households in the sample data with public assistance.

Similar to food insecurity hardships, there are fairly large gender and race disparities in rates of shelter and health care hardships. The data suggest that gender disparities in these two forms of material hardships are reduced—and potentially eliminated in the case of shelter hardships—among household receiving DB pension income. Disparities in rates of shelter hardship between White and racial/ethnic households are smaller among households with DB pension income. For example, the

6 percentage point disparity in shelter hardship rates between White and Hispanic households without DB pension income (5.8 percent vs 12 percent) is three times greater than the almost 2 percentage point disparity among DB pension income recipient households (2.1 percent vs 4 percent). However, while health care hardships are lower among households with DB pension income, racial/ethnic disparities do not appear to be reduced very much among households with DB pension income.

Households with Pensions Income are Less Likely to Rely on Public Assistance

For many older American households with insufficient retirement income, particularly those unable to work or to find suitable employment, there may be few options other than to seek public assistance to help them meet their basic living needs. Table 7 shows that in 2010 about 11.4 percent of some 35.4 million American households with a householder age 60 or older received an average of \$6,494 in means-tested cash transfers (e.g., Supplemental Security Income [SSI], general assistance) and/or noncash public assistance (e.g., food stamps, rent subsidies, energy assistance). This rate of public assistance receipt is only slightly higher than the 10.9 percent rate that was found for 2006. These are conservative estimates of public assistance receipt, since the SIPP definition of means-tested public assistance does not include expenditures made on behalf of Medicaid recipients.

The data in Table 7 suggest that older households receiving DB pension income are much less reliant on public assistance transfers than households without pension income. Among households without DB pension income, 16.4 percent received public assistance in 2010, a rate that is more than triple the 4.7 percent rate for households with DB pension income. Interestingly, 2010 public assistance recipient households with DB pension received about \$869 more, on average, in cash and noncash transfer income than their public assistance recipient counterparts without DB pension income.²²

There are large gender and race/ethnic disparities in rates of public assistance receipt, yet these disparities are generally smaller among households with DB pension income. Whereas rates of public assistance receipt rates among female-headed households without DB pension exceeded those with male heads by 6.3 percentage points (19 percent vs 12.7 percent), this gender disparity was reduced to less than one percentage point among households with pension income (5 percent vs 4.3 percent). Among households without DB pension income, the public assistance receipt rates of non-White households, all of which exceeded 30 percent, were about 20 percentage points higher than the 10.9 percent receipt rate among White households without DB income. However, none of the race/ethnic disparities in public assistance receipt rates relative to White households exceeded 8.5 percentage points among households with DB pension income.²³

Pension Income Protected Many Older Households From the 2008 Financial Collapse

The data presented thus far suggests that, on average, the economic welfare of older American households declined between 2006 and 2010. When these data are reported alongside of each other in Table 8, they provide a fuller picture of the economic hardships experienced by older American households before and after the 2008 financial crisis. Both the number and percentage of older households classified as poor increased between 2006 and 2010, adding about 570,000 to the overall count of poor households. Although the percentage of near-poor households declined, the absolute count of near-poor older households increased by about 526,000 between 2006 and 2010. Rates of material hardships among older households also increased substantially between 2006 and 2010. At the same time, however, there was only a relatively modest increase in the rate of public assistance receipt among older households between the same years (Figure 4).²⁴

When the data are stratified by DB pension receipt status, the data in Table 8 suggest that older households with DB pension income generally fared much better during this period of economic turmoil relative to their counterparts without pension income. Both the percentage and the absolute number of poor households with DB pension income actually declined between 2006 and 2010. Furthermore, although material hardship rates increased among households with DB pension income between 2006 and 2010, the percentage-point increases in their hardship rates were between 0.6 and 1.16 percentage points smaller than the percentage-point increases for households without DB pension income. For example, whereas there was a 0.6 percentage point increase in shelter hardship rates among DB pension recipient households between 2006 and 2010, shelter hardship rates increased by more than 1.4 percentage points among households without DB pension income over the same time period. While these data suggest that DB pension income protected many older households from economic hardship after the 2008 financial crisis, there were about 60,000 fewer older households with DB pension income in 2010 than in 2006. In comparison, the number of older households without pension income increased by about 3.86 million. Given the likely continued decline in rates of DB pension receipt, these data not portend much optimism about the economic well-being of older American households in the future.

Table 8: The 2008 Financial Crisis: Rates of Poverty, Material Hardships, and Public Assistance Receipt among Older Households in 2006 and 2010 by DB Pension Status

	All Households		
	2006	2010	Change 2006-2010 ^a
Households (millions)	31.6	35.4	3.8
Poverty Status			
Percent Poor^b	9.0%	9.7%	0.7%
Number of Households (thousands) ^c	2,851	3,421	570
Percent Near Poor	25.5%	24.2%	-1.3%
Number of Households	8,040	8,566	526
Percent Not Poor	65.5%	66.1%	0.6%
Number of Households	20,677	23,370	2,693
Material Hardships/Public Assistance			
Percent with Food Insecurity Hardship	4.7%	6.2%	1.5%
Number of Households (thousands)	1,496	2,204	708
Percent with Shelter Hardship	4.6%	5.9%	1.3%
Number of Households	1,452	2,086	634
Percent with Health Care Hardship	6.0%	7.0%	1.0%
Number of Households	1,907	2,489	582
Percent with Public Assistance	10.9%	11.4%	0.5%
Number of Households	3,432	4,044	612
	With DB Pension Income		
	2006	2010	Change 2006-2010
Households (millions)	15.0	14.9	-0.06
Poverty Status			
Percent Poor^b	2.4%	1.7%	-0.7%
Number of Households (thousands) ^c	355	251	-104
Percent Near Poor	16.2%	14.7%	-1.5%
Number of Households	2,425	2,194	-231
Percent Not Poor	81.5%	83.6%	2.1%
Number of Households	12,240	12,500	260
Material Hardships/Public Assistance			
Percent with Food Insecurity Hardship	2.6%	3.5%	0.9%
Number of Households (thousands)	399	528	129
Percent with Shelter Hardship	2.4%	3.0%	0.6%
Number of Households	363	449	86
Percent with Health Care Hardship	4.2%	4.3%	0.1%
Number of Households	625	642	17
Percent with Public Assistance	4.6%	4.7%	0.1%
Number of Households	690	703	13

Figure 3: DB Pension Status Impact: Poverty in 2006 and 2010

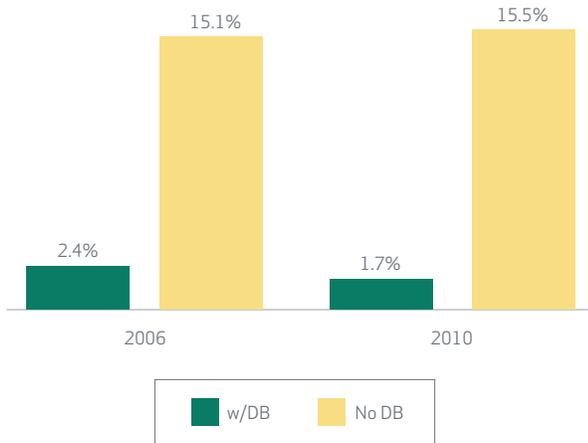


Figure 4: DB Pension Status: Number of Households Receiving Public Assistance

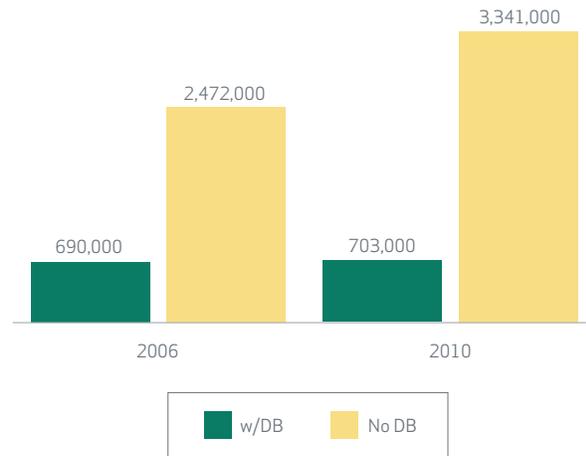


Table 8 (continued)

	No DB Pension Income		
	2006	2010	Change 2006-2010
Households (millions)	16.6	20.4	3.86
Poverty Status			
Percent Poor^b	15.1%	15.5%	0.4%
Number of Households (thousands) ^c	2,496	3,170	674
Percent Near Poor	33.9%	31.2%	-2.7%
Number of Households	5,615	6,372	757
Percent Not Poor	51.0%	53.2%	2.2%
Number of Households	8,437	10,870	2,433
Material Hardships/Public Assistance			
Percent with Food Insecurity Hardship	6.7%	8.2%	1.5%
Number of Households (thousands)	1,097	1,676	579
Percent with Shelter Hardship	6.6%	8.0%	1.4%
Number of Households	1,089	1,637	548
Percent with Health Care Hardship	7.8%	9.1%	1.3%
Number of Households	1,282	1,847	565
Percent with Public Assistance	16.6%	16.4%	-0.2%
Number of Households	2,742	3,341	599

Source: Analysis of data from the 2004 and 2008 SIPP.

a Changes in percentages are reported as differences in percentage points. They are computed as simple differences between 2010 and 2006 values. These should not be interpreted as percentage increases or decreases from 2006 to 2010.

b Poor: (Income \leq FPL), Near Poor: (FPL < Income \leq 200% FPL), Not Poor: (Income > 200% FPL)

c Except for total households all other household counts are reported in thousands.

THE PENSION FACTOR: ISOLATING THE IMPACT OF PENSION INCOME ON ELDER WELL-BEING

The descriptive statistics presented thus far suggest that older households with DB pension income in 2010 fared much better than households without such income on several indicators of economic welfare.

We now quantify these impacts by developing estimates of how many households were able to escape poverty and avoid material hardships as a consequence of their DB pension income. In addition, we estimate government savings in the form of public assistance expenditures that were not made because of the financial security associated with the receipt of DB pension income. In order to provide some perspective on the magnitude of these estimated DB impacts, we also develop similar estimates of the impacts of DC and Social Security income receipt.

The estimated impacts of DB, DC, and Social Security retirement income receipt on poverty, material hardships, and public assistance receipt outcomes in 2010 are derived from statistical models. In order to isolate the effects of DB, DC, and Social Security receipt on the probability of each adverse outcome, each statistical model contained a set of household attribute variables reflecting factors that in theory should also affect the probability of a household suffering the adverse outcome.

To illustrate the importance of controlling for other factors affecting these adverse outcomes, we will consider poverty status. In order to isolate the effect of DB pension receipt on the probability that an older household is poor, we must control for differences in the education, age, gender, marital status, and the race/ethnicity of the householder, because the risk of poverty will vary among households depending on these characteristics. For example, a household headed by a native-born, higher-educated, married, white male may be expected to have had a more continuous work history, higher earnings, and greater wealth accumulation than a household headed by a foreign-born, lesser-educated, divorced, Black

woman. Because the male householder in this example should also be more likely than his female counterpart to have worked in a job with a DB pension benefit, such potential confounding household characteristics must be specified as variables in a statistical model of poverty status. Otherwise, we may erroneously attribute the effects of factors such as higher education, male gender, or race on poverty risk to an effect of DB pension receipt.²⁵

In each statistical model, the probability of a household experiencing the adverse outcome was specified to be a function of socio-demographic attributes of the household and its head. These attributes included age, gender, race, marital status, education level, household size, foreign born and citizenship status, geographic residence location, career industry and occupation, current employment status, and indicators of whether or not the household receives DB pension income, DC income, and Social Security income. The estimated coefficient for a particular variable in these models, such as DB pension receipt, reflects the independent contribution of that factor to the predicted probability that a household with certain characteristics (like those mentioned above) will experience a poverty or material hardship outcome, when all of the other variables in the model are unchanged.

For example, consider two households that have identical socio-demographic and economic attributes and who live in the same geographic region. Neither household receives any DC income. Both households receive some Social Security income. These two households differ only in that one of them receives some DB pension income and the other does not. The estimated coefficient for the DB pension receipt variable in the statistical models allows us to estimate the how much

the probability of each hardship outcome will differ for these two, otherwise identical, households. By extension, these coefficients can also be used to estimate for how much the probability of hardship and poverty outcomes are expected to change, on average, for each household with DB pension income in the sample data if they had not received any DB pension income.

The estimated coefficients from the statistical models were used to generate national predictions of the number of households that would have experienced each adverse outcome, such as poverty or a shelter hardship, if no households received any DB pension income. The difference between this adjusted estimate and the national estimate of households actually experiencing the outcome produces a national estimate of the number of

households that were able to avoid adverse economic welfare because of their receipt of DB pension income. Additional details about the analytic strategy, model estimation, and sensitivity analyses conducted to test the robustness of the empirical results can be found in the Technical Appendix.²⁶

Pensions Reduce Poverty

Table 9 presents national estimates of the impacts of DB pension, DC, and Social Security income on the poverty status of older households in 2010. The estimates suggest that in 2010, about 4.7 million older households would have been added to the count of poor or near-poor households if not for their receipt of DB pension income. An estimated 1.47 million additional households that were not poor in 2010

Table 9: The Pension Factor: Projected Changes in Poor, Near Poor and Not Poor Older Households without DB, DC, and Social Security Income in 2006 and 2010

	Number of Households in 2006 (millions)	Net Change in Households (millions)	Percent change	Number of Households in 2010 (millions)	Net Change in Households (millions)	Percent change
Poor Households^b						
Actual SIPP National Estimate	2.85			3.42		
Without DB Income Receipt ^a		1.72	60.4%		1.71	50.1%
Without DC Income Receipt		0.03	1.1%		0.09	2.6%
Without Social Security Income Receipt		2.95	103.5%		3.77	110.3%
Near Poor Households^b						
Actual SIPP National Estimate	8.04			8.57		
Without DB Income Receipt		2.97	36.9%		2.99	34.9%
Without DC Income Receipt		0.06	0.7%		0.10	1.2%
Without Social Security Income Receipt		-1.30	-16.2%		-2.31	-26.9%
Not Poor Households^b						
Actual SIPP National Estimate	20.68			23.36		
Without DB Income Receipt		-4.69	-22.7%		-4.71	-20.1%
Without DC Income Receipt		-0.09	-0.4%		-0.19	-0.8%
Without Social Security Income Receipt		-1.64	-7.9%		-1.47	-6.3%

Source: Analysis of data from the 2004 and 2008 SIPP.

a Results are derived from a multinomial logit model with dummy variables indicating DB, DC, or Social Security receipt set to zero, respectively. See Technical Appendix.

b Poor: (Income ≤ FPL), Near-Poor: (FPL < Income ≤ 200% FPL), Not-Poor: (Income > 200% FPL)

Table 10: The Pension Factor: Projected Changes in Older Households Experiencing Material Hardships without DB, DC, or Social Security Income in 2006 and 2010

	Older Households Experiencing Hardship 2006 (millions)	Increase in Households with Hardship (millions)	Percent change	Older Households Experiencing Hardship 2010 (millions)	Increase in Households with Hardship (millions)	Percent change
Food Insecurity Hardship						
Actual SIPP National Estimate	1.50			2.20		
Without DB Pension Income Receipt ^a		0.43	28.6%		0.46	20.9%
Without DC Income Receipt		0.05	3.4%		0.00	0.0%
Without Social Security Income Receipt		0.00	0.0%		0.00	0.0%
Any Shelter Hardship						
Actual SIPP National Estimate	1.45			2.09		
Without DB Pension Income Receipt		0.38	26.2%		0.50	24.0%
Without DC Income Receipt		0.04	2.8%		0.04	1.7%
Without Social Security Income Receipt		0.00	0.0%		0.00	0.0%
Health Care Hardship						
Actual SIPP National Estimate	1.91			2.49		
Without DB Pension Income Receipt		0.32	16.8%		0.51	20.6%
Without DC Income Receipt		0.06	3.2%		0.03	1.3%
Without Social Security Income Receipt		0.00	0.0%		0.00	0.0%

Source: Analysis of data from the 2004 and 2008 SIPP.

a Results are derived from binary logit models with dummy variables indicating DB, DC, or Social Security receipt set to zero, respectively. See Technical Appendix.

would be similarly re-classified as poor or near-poor if not for their receipt of Social Security income.²⁷ About 190,000 not-poor households in 2010 would be reclassified as near-poor or poor without their receipt of DC income.²⁸ Table 9 contains similar estimates for 2006, previously reported for comparison purposes. The estimated numbers of older households protected from living in poverty or near-poverty due to retirement income receipt in 2010 are comparable to those estimated for 2006.

More not-poor older households were protected from poverty or near-poverty by DB pension income receipt than Social Security income receipt. However, Social Security income

protected a greater number of older near-poor and not-poor households from more extreme poverty (defined by income below the FPL) than did DB pension receipt (3.77 million vs 1.71 million). In other words, the data for both years suggests that Social Security is highly effective at helping seniors avoid poverty, while DB pensions better enable people to maintain a middle-class standard of living in retirement.

Pensions Reduce Material Hardships

Table 10 contains estimates of the impacts of DB, DC, and Social Security income receipt on the material hardships experienced by older American households in 2006 and 2010. We estimate that about 460,000 additional older households

would have experienced food insecurity hardships in 2010 if it were not for their DB pension income. This would amount to nearly a 21 percent increase in older households experiencing food insecurity hardships. Without their DB pension income, we estimate that about 500,000 additional older households would have experienced a shelter hardship in 2010, a 24 percent increase over the estimated 2.09 million older households with actual shelter hardships that year. We also estimate that additional 510,000 additional older households would have experienced a health care hardship in 2010 without their receipt of DB pension income, a 20.6 percent increase over the 2010 national estimate of 2.49 million older households where a household member did not see doctor or dentist when one was needed. Interestingly, the likelihood of each of the material hardships was not associated with either DC income or Social Security income receipt once other household risk factors for these hardships were accounted for in 2010.²⁹

A comparison of 2006 and 2010 projected impacts of DB pension receipt on material hardships suggests that DB pension income protected more households from these material hardships in 2010 than in 2006. However, the SIPP estimates of households actually suffering from these material hardships were also greater in 2010 than in 2006.³⁰ The percentage increases in projected numbers of older households experiencing material hardships in the absence of DB pension income were a little smaller in 2010 than in 2006 except for health care hardships (20.6 percent in 2010 vs 16.8 percent in 2006). The lower rate of DB pension receipt among all older households and the higher rate of material hardships among households with DB pension income contribute to the more modest impacts of DB pension receipt when measured on a percentage basis.

Pensions Reduce Public Assistance Receipt

Table 11 contains national estimates of the impact of DB, DC, and Social Security income receipt upon older households' receipt of means-tested public assistance in 2006 and 2010. We estimate that without their receipt of DB pension income, an additional 1.22 million older American households would be added to the rolls of public assistance recipients in 2010. This represents more than a 30 percent

increase over the four million older households who received public assistance in 2010. We projected that about 130,000 and 810,000 additional older households would have received public assistance in 2010 the absence of DC income and Social Security income receipt, respectively. In contrast to 2006, the greatest estimated impacts were associated with DB pension income receipt. Employing the mean dollar amount of \$6,494 received by all older households with public assistance in 2010, we estimate that DB pension income receipt reduced claims on governmental public assistance from older households in 2010 by about \$7.9 billion dollars. This amount, which does not include Medicaid expenditures, would represent about 6.4 percent of an estimated \$123.6 billion in public assistance received by households with a head of any age in 2010 from the same programs included as means-tested public assistance income the SIPP data. These estimated aggregate savings are slightly smaller than the inflation-adjusted 2006 estimate of \$8 billion, which represented about 8.5 percent of 2006 aggregate expenditures for all households.

While the estimated reduction in public assistance expenditures associated with DB pension receipt was smaller than in 2006, the estimated reduction of \$5.3 billion in public assistance expenditures associated with Social Security receipt in 2010 is less than half of the \$11.1 billion reduction estimated in 2006. Data presented earlier in Table 4 showed that receipt rates declined between 2006 and 2010 for both DB pension and Social Security income. However, while there were modest increases in mean and median DB pension income amounts received by recipient households between 2006 and 2010, these amounts declined among Social Security recipient households over the same four years. Furthermore, the data suggest that Social Security recipient households were just as likely as households without Social Security income to receive public assistance in 2010. This differs from 2006, where the rate of public assistance receipt among Social Security recipient households was nearly 4 percentage points lower than among older households without Social Security income (13.7 percent vs 10 percent).³¹ While further study is required to understand the factors contributing to smaller impact of Social Security income on public assistance receipt, these data suggest that older households were less able to meet their economic needs with Social Security income in 2010 than in 2006.

Table 11: The Pension Factor: Projected Changes in Older Households Receiving Public Assistance without DB, DC, or Social Security Income in 2006 and 2010

	Older Households Receiving Public Assistance (millions)	Increase in Households with Public Assistance (millions)	Percent change	Aggregate Public Assistance Expenditures in 2010 (billions)	Increase in Public Assistance Expenditures (billions)	Percent change
Public Assistance Receipt						
Actual National SIPP Estimate 2006	3.43			\$20.3		
Without DB Pension Income Receipt ^a		1.35	39.4%		\$8.0	39.4%
Without DC Income Receipt		0.07	2.0%		\$0.4	2.0%
Without Social Security Income Receipt		1.88	54.8%		\$11.1	54.8%
Public Assistance Receipt						
Actual National SIPP Estimate 2010	4.04			\$26.3		
Without DB Pension Income Receipt ^a		1.22	30.3%		\$7.9	30.3%
Without DC Income Receipt		0.13	3.2%		\$0.9	3.2%
Without Social Security Income Receipt		0.81	20.0%		\$5.3	20.0%

Source: Analysis of data from the 2004 and 2008 SIPP.

a Results are derived from binary logit models with dummy variables indicating DB, DC, or Social Security receipt set to zero, respectively. See Technical Appendix.

This study provides an updated empirical analysis of the contribution of DB pensions to the economic welfare of older American households. While our data suggest that the economic well-being of many older American households declined between 2006 and 2010, they also suggest that DB pension income plays even a more vital role in reducing the risk of poverty and material hardships among older households in 2010 than in 2006.

Whereas the poverty rate among older households without DB pension income increased from 15.1 percent to 15.5 percent between 2006 and 2010, it fell from 2.4 percent to 1.7 percent among households with DB pension income. In 2010 the poverty rate among older households without DB pension income was more than nine times greater than the rate among older households that were recipients of DB pension income.

Although the rates of food insecurity, shelter, and health care hardships among older households with DB pension income increased between 2006 and 2010, DB pension income protected older families from the higher rates of material hardship experienced by their counterparts without pension income. The 2006 disparities in material hardship rates between older households with and without pension income were widened in 2010. DB pension recipient households remained much less reliant on public assistance than their counterparts without pension income in spite of a modest increase in their rate of public assistance receipt between 2006 and 2010. Even so, the rate of public assistance receipt among households with DB pensions was still less than one-third of the 16.4 percent receipt rate among older households without pension income in 2010.

Overall, our analyses suggest that DB pension income generally protected the economic welfare of many older households after the 2008 financial crisis. Moreover, it provided even greater

protection to some more vulnerable subpopulations of older households. Our analyses of 2010 data suggest that common gender and racial disparities in rates of poverty, material hardships, and dependence on public assistance were greatly diminished, and in some cases nearly eliminated, among households receiving DB pension income in 2010.

Our empirical findings suggest that economic welfare protection that DB pension income offers to older American households remain strong in 2010. The study findings reaffirm the premise that the regular stream of income and spousal protection that pensions offer older American households provide them a much better chance of self-sufficient life in retirement with fewer economic hardships.

However, given the long-term trend of declining DB plan participation rates among workers for more than three decades, the decrease in rates of DB pension receipt among both older persons and older households between 2006 and 2010 suggests that we may be on the precipice of a sustained period of declining future rates of DB pension income receipt. Without alternative sources of retirement income that can improve the retirement readiness of American households, older American households in the future may face even greater risks of economic hardships and greater dependence on public assistance to meet their basic economic needs after retirement from the labor force.

Data Sources

The primary data source is the Survey of Income and Program Participation (SIPP), a representative national panel sample of the non-institutionalized U.S. civilian population. Panel respondents are interviewed at four-month intervals (waves) over a 3-4 year time span. Each interview solicits information on a core set of income, labor force, and program participation questions in addition to questions focused on specific topics such as pension plan coverage, adult well-being, employment history, and health. The focused topic questions are only asked once or twice during the multi-year span of the panel survey at selected interviews in the form of topical modules. Data for this study were drawn from the 2004 and 2008 SIPP panels. The 2006 data drawn from the 2004 SIPP panel, were those employed by Porell and Almeida (2009).³² The 2010 data were drawn from the 2008 SIPP panel for this study.

Analytic File Construction

The 2010 analytic data file was constructed from the Wave 6 core file and two topical module files. Wave 6 core data for reference month 4 are first merged to the Adult Well-Being Topical Module 6.³³ Retirement and pension plan variables from the Pension and Retirement Plan Module 3 are then merged. Because of sample attrition, and the addition of new household members between waves 3 and 6 of SIPP panel interviews, there cannot be a complete one-to-one match of Wave 3 and Wave 6 respondents. Accordingly, the 2010 analytic file is comprised of the subset of respondents with records in both the Pension (Wave 3) and Adult Well-Being (Wave 6) topical modules. Lastly, the population weights for the subset of Wave 6 respondents retained after the merger of Wave 3 and Wave 6 data are adjusted to compensate for the net sample attrition in the final analytic file.

Study Populations

In the descriptive analyses “older persons” are defined as all individual respondents age 60 years or older. Older households are defined as all households where the householder is 60 years or older. The U.S. Census Bureau defines a householder as “the person (or one of the people) in whose name the housing unit is owned or rented (maintained) or, if there is no such person, any adult member, excluding roomers, boarders, or paid employees. If the house is owned or rented jointly by a married couple, the householder may be either the husband or the wife. The person designated as the householder is the “reference person” to whom the relationship of all other household members, if any, is recorded.”³⁴ This definition of older household excludes any household in which older person lives in a dependent living arrangement with a younger householder. This restriction is appropriate in light of this study’s objectives. For example, when an older person lives with the family of a householder who is his/her child, household income is more likely to reflect the financial resources of the child rather than the co-resident parent. Demographic attributes of the household such as age, gender, and race are those of the householder.

Defined Benefit Pension Status and Income

Receipt of a defined benefit (DB) pension is defined here as receiving pension income in the reference month from a former employer because of retirement, disability, or survivorship. A recipient must also expect to receive this income regularly for the remainder of his/her life. Similar to past research using SIPP data, payments from Social Security, withdrawals from IRA, Keogh and 401(k) plans, and lump sum pension distributions are not counted as DB pension income. Annual pension income is estimated by multiplying the amount in the reference month twelve. These annualized pension income amounts were then

inflated or deflated by the Bureau of Labor Statistics Consumer Price Index (CPI) for the reference month and year to produce a constant dollars amount for April 2010.³⁵

Pension receipt for persons is measured in two ways: (1) pension income received from one's own former employer only, and (2) pension income received from both one's own former employer and/or from the former employer of a current or decedent spouse. The spouse person identifier variable in SIPP core file records was used to merge spousal records with pension variables to all SIPP respondents 60 years old or older. Pension receipt for households includes pension income received from both the head of household's own former employer and/or from the former employer of a spouse.

Public and Private Pension Income

While public and private source of DB pension income cannot be distinguished in the SIPP Retirement and Pension Plan Coverage Topical Module data, seven types of DB pension income sources are reported in SIPP Core Interview data. Public pensions include: (1) Federal Civil Service or other Federal civilian employee pension, (2) U.S. military retirement, (3) state government, (4) local government, and (5) Railroad Retirement Board. Private pensions include: (1) company or union pension, and (2) other nongovernment retirement pensions.

Annual Household Income Quintiles

Annual household income is estimated by multiplying the reference month amount by twelve. The CPI is used to adjust this amount to reflect constant dollars for April 2010. Household income quintiles for 2010 are defined for all households as reported by the U.S. Census Bureau. The quintile definitions for 2010 are: (below \$20,000) (\$20,000-\$38,040) (\$38,040-\$61,720) (\$61,720-\$100,065) (\$100,065 and above).³⁶

Poverty Class

The SIPP contains a household-level variable for the dollar amount of the U.S. Census federal poverty level (FPL) threshold. This threshold is based on family size, age of the householder (65 years and older versus under 65 years), and number of related children under 18 years old. This variable is used to classify each household in the sample into one of three poverty level classes: (1) *poor* income at or below the FPL, (2) *near-poor* income above the FPL but at or below 200% of the FPL, and (3) *not poor* income greater than 200% of the FPL.

Material Hardship Measures

Three material hardship measures are constructed from the SIPP Adult Well-Being Topical Modules. These measures were used by Porell and Almeida (2009)³⁷, and include hardships related to: inability to meet basic living expenses, inadequate food consumption, and unmet medical or dental needs.

A household is classified as having a *shelter hardship* if it reported that it experienced at least one of the following five hardships in the previous year: (1) did not pay the full amount of the rent or mortgage, (2) was evicted from one's home or apartment for not paying the rent or mortgage, (3) did not pay the full amount of the gas, oil, or electricity bills, (4) gas or electric company turned off service, or the oil company did not deliver oil because of payment problems, and (5) the telephone company disconnected service because payments were not made.

Food hardships are defined by a measure derived from a three-point food security scale formerly used by the U.S. Department of Agriculture (USDA).³⁸ The scale is constructed as a count of responses of yes, sometimes, or often to five questions about food-

related hardships experienced because of lack of money over the last four months: (1) food we bought didn't last, (2) couldn't afford balanced meals, (3) cut size or skipped meals, (4) ate less than felt needed, and (5) didn't eat for a whole day. A household is classified as having a food hardship with two or more positive responses to these five questions.

A household is classified as having a *health care hardship* if it reported that in the previous year a household member did not see a doctor or dentist when a visit was needed.

Public Assistance Receipt and Amounts

The SIPP contains information about various types of cash and noncash forms of public assistance received by households, as well as the aggregated amount of cash and noncash assistance received. A binary variable (1,0) indicating the receipt of cash and/or noncash public assistance receipt was created from two constructed SIPP variables: *THTRNINC*, an aggregated total of household means-tested cash transfers for reference month, and *THNONCSH*, an aggregated total dollar value of noncash public assistance for the reference month. Means-tested cash assistance includes Supplemental Security Income (SSI), Temporary Assistance for Needy Families (TANF), and general assistance. Noncash public assistance includes Women, Infants, and Children Nutrition Program (WIC), food stamps, and energy assistance. While the SIPP contains information about Medicaid eligibility, it is not counted here as public assistance because the SIPP does not have information on dollar amounts of Medicaid reimbursements. The annual dollar amount of public assistance received is computed as twelve times the sum of cash and noncash public assistance in the reference month. Annualized public assistance amounts are adjusted to constant dollars for April 2010 with the CPI.

Multivariate Analyses

Four statistical models are estimated on a sample of 10,942 households with a householder age 60 years and older in 2010. The dependent variables for these models are listed below:

Public assistance	1=household receipt of cash and/or noncash assistance, 0=otherwise
Food hardship	1=household classified with a food insecurity with or without hunger under USDA scale, 0=otherwise
Health care hardship	1=household reports forgoing medical and/or dental services, 0=otherwise
Financial hardship	1= household reports one or more of 5 potential hardships associated with making ends meet, 0=otherwise.
Poverty status	1= poor, 2=near-poor, 3=not-poor.

Logistic regression models are estimated for the four binary dependent variables defined above. A multinomial logit model is estimated for the categorical dependent poverty status variable because statistical tests did not support the proportional odds assumption required for estimating an ordinal logit model specification. Observations are weighted by normalized population weights and the standard errors of coefficients are adjusted for the complex survey design of the SIPP by use of *svylogit* procedures in Stata V11.0.

The key independent variables of interest that are specified in all of the models are dummy variables indicating the receipt of any DB pension income, defined contribution (DC) income, and Social Security income by the householder and/or spouse. Control variables are also specified to account for other socio-demographic factors that should theoretically affect the risk of poverty, public assistance receipt, and material hardships among older households. To permit comparisons of 2006 and 2010

Table A-1: Definitions of Independent Variables

Variable Name	Definition
Retirement Income Receipt Status	
DB pension receipt	1= householder and/or spouse received DB pension income 0=no
DC income receipt	1= householder and/or spouse received DC income, 0=no
SS income receipt	1= householder and/or spouse received Social Security income, 0=no
Current and Past Employment Status	
Full-time employed	1= works 30 or more hours per week in current employment, 0=otherwise
Part-time employed	1= works less than 30 hours per week in current employment, 0=otherwise
Not Employed (omitted reference group)	1= does not work, 0=otherwise
Socio-Demographic Attributes	
Age	Age in years
Male	1=male, 0=female
Widowed	1=widowed, 0=otherwise
Divorced or separated	1=currently divorced or separated, 0=otherwise
Never married	1= never married, 0= otherwise
Married (omitted reference group)	1= married, 0=otherwise
NonHispanic Black	1= nonHispanic Black, 0=otherwise
Hispanic	1= Hispanic, 0=otherwise
Other Race	1=Other race, 0=otherwise
NonHispanic White (omitted reference group)	1- nonHispanic White, 0=otherwise
Born outside of US	1= born outside of the U.S., 0=born in U.S.
Household members	Count of household members
8 or fewer years of school	1= 8 or fewer years of schooling completed, 0=otherwise
9-11 years of school	1=9-11 years of schooling completed, 0=otherwise
High school graduate or GED	1=12 years of schooling, high school graduate, or GED, 0=otherwise
1-3 years of college	1=1-3 years of college completed, 0=otherwise
4+ years of college (omitted reference group)	1= 4 or more years of college completed, 0=otherwise
Geographic Residence	
Midwest	1= residence in Midwest Census Region, 0=otherwise
South	1= residence in South Census Region, 0=otherwise
West	1= residence in West Census Region, 0=otherwise
Northeast (omitted reference group)	1= residence in Northeast Census Region, 0=otherwise
Metropolitan area residence	1= metropolitan residence, 0=otherwise

Table A-2: Sample Means for Variables in Statistical Models (n=10,942)

Variable Name	Mean	95% Confidence Interval
DB pension receipt	0.42	0.41 , 0.43
DC income receipt	0.06	0.06 , 0.07
SS income receipt	0.78	0.77 , 0.79
Full-time employed	0.20	0.19 , 0.21
Part-time employed	0.09	0.08 , 0.09
Age	71.2	71.0 , 71.4
Male	0.44	0.43 , 0.45
Widowed	0.29	0.28 , 0.30
Divorced or separated	0.18	0.17 , 0.19
Never married	0.01	0.01 , 0.02
Non Hispanic Black	0.10	0.09 , 0.10
Hispanic	0.06	0.06 , 0.07
Other race	0.04	0.04 , 0.04
Born outside of U.S.	0.09	0.09 , 0.10
Household members	1.77	1.75 , 1.79
8 or fewer years of school completed	0.07	0.07 , 0.08
9-11 years of school	0.08	0.07 , 0.09
High school graduate or GED	0.28	0.27 , 0.29
1-3 years of college	0.31	0.30 , 0.32
Midwest	0.23	0.22 , 0.24
South	0.37	0.36 , 0.38
West	0.20	0.20 , 0.21
Metropolitan area residence	0.77	0.74 , 0.79

empirical results, the same control variables used by Porell and Almeida (2009)³⁹ are specified in the statistical models used to make projections of the impacts of DB, DC, and Social Security receipt.⁴⁰ Table A-1 contains definitions for these variables and sample means are reported in Table A-2. Table A-3 contains estimated relative risk ratios from the multinomial logit model of poverty status. Odds ratio estimates from the logit models of public assistance receipt and three material hardship outcomes are reported in Table A-4.

Sensitivity Analyses

The statistical models should be fully-specified so that effects of omitted variables are not erroneously attributed to the effects of DB, DC, or Social Security income receipt. A particular concern may be raised about bias associated with the potential endogeneity of DB, DC, and Social Security income receipt in the statistical models. Some persons with stronger “tastes for saving” may self-select to work in jobs with DB pension or DC plans as a means of saving for retirement. If this is true, the estimated impacts of DB pension receipt from the statistical models may be overstated under the following reasoning. If persons with stronger preferences for retirement security tend to disproportionately obtain jobs with a DB pension plan and a measure of savings preference is not specified as a control variable in the statistical model, then the coefficient estimate for DB pension

Table A-3: Multinomial Logit Model Results for Poverty Class Status (n=10,934)

Variables	Poor Relative to Not Poor		Near Poor Relative to Not Poor	
	Relative Risk Ratio	p-value	Relative Risk Ratio	p-value
DB pension receipt	0.05	0.000	0.19	0.000
DC income receipt	0.20	0.000	0.59	0.000
SS income receipt	0.25	0.000	1.10	0.376
Full-time employed	0.08	0.000	0.18	0.000
Part-time employed	0.34	0.000	0.50	0.000
Age	1.01	0.016	1.02	0.000
Male	0.66	0.000	0.80	0.000
Widowed	1.43	0.004	1.79	0.000
Divorced or separated	2.21	0.000	2.04	0.000
Never married	1.42	0.178	1.13	0.602
Non Hispanic Black	2.32	0.000	1.49	0.000
Hispanic	1.89	0.001	1.22	0.182
Other race	2.34	0.000	1.41	0.031
Born outside of U.S.	1.36	0.018	1.22	0.048
Household members	0.57	0.000	0.74	0.000
8 or fewer years of school completed	8.04	0.000	5.16	0.000
9-11 years of school	4.86	0.000	3.90	0.000
High school graduate or GED	2.50	0.000	2.71	0.000
1-3 years of college	1.68	0.000	1.78	0.000
Midwest	0.76	0.038	0.93	0.431
South	0.94	0.619	1.01	0.908
West	0.66	0.005	0.76	0.007
Metropolitan area residence	0.65	0.000	0.75	0.000
Pseudo- R square	0.24			

receipt will not only reflect the true effect of DB pension income receipt, but also the effect a preference toward greater saving for retirement. The reasoning is that in the absence of having a DB pension plan, persons with a stronger “taste for saving” would accumulate greater retirement savings from other sources, such as greater personal savings, to compensate for the lack of a DB pension at retirement. As a consequence of this type of compensatory economic behavior, the projected impacts of DB pension income receipt on poverty, material hardships, and public assistance receipt derived from statistical models lacking a variable measuring savings preference would overstate these projected impacts. In other words, additional personal savings for retirement would offset some of estimated positive effects of retirement income receipt on economic welfare.

While empirical evidence concerning whether DB and DC plans actually increase total savings is inconclusive, sensitivity analyses were nevertheless performed to assess the stability of the empirical results. First, the models were re-estimated on a subsample of SIPP households in which the householder or his/her spouse retired from a job or business in the past. By restricting this subsample to retired households, it was possible to specify additional work history variables likely to affect economic welfare after retirement: pre-retirement annual household earnings, years worked at pre-retirement job, and years since retirement. The

statistical models were re-estimated on data for the subsample of 6,059 older retired households. Specification of additional pre-retirement work history variables in these models estimated on the subset of retired households only produced only modest changes in the estimated coefficients for DB, DC, and Social Security retirement income receipt dummy variables. The results did not provide any statistical evidence to suggest that the estimated DB pension income impacts are overstated.

The concern over endogeneity bias was also addressed by re-estimating the models with a two-step probit model instrumental variable estimation procedure (*ivprobit*) in Stata. A probit model of DB pension receipt is estimated in the first step. The binary dependent variable in this model distinguishes older households with DB pension income from those without such income. Additional variables that should theoretically help to distinguish DB pension income recipients are specified in this probit model, including dummy variables to distinguish among persons who: worked in different industries and occupations, were military veterans, lacked citizenship, did not speak English at home, lived in linguistic isolation, were severely or moderately disabled, and had no continuous work history. Predictions from this probit model are used to create an instrumental variable to replace the observed DB pension receipt variable in the statistical models described above. Instrumental variable estimation did not indicate that the estimated effects of DB pension receipt on economic welfare outcomes were upward-biased. However, some caution is still warranted because the variables tested were not particularly strong instruments. Addressing potential endogeneity bias with such instrumental variable estimation methods can produce fragile results without strong instruments (i.e., variables that directly affect DB pension receipt, but have no direct effect on economic welfare outcomes once pension receipt is controlled).

Estimating of the Impacts of DB, DC, and SS Income Receipt on Welfare Outcomes

The estimated coefficients from the statistical models described were used to derive estimates of the number of additional older households that were able to avoid poverty, material hardships, and dependency on public assistance due DB, DC, and Social Security income receipt.

These projected impacts on economic welfare outcomes were derived under a three-step procedure described below for public assistance receipt and DB pension income receipt. The same approach was used for other adverse welfare outcomes, and for estimating the impacts of DC and Social Security income receipt

1. Predicted values are obtained from the estimated model with actual SIPP respondent values for DB pension receipt. These predicted values were multiplied by SIPP population weights and summed to obtain a national estimate of the number of households with DB pensions receiving public assistance.
2. A second set of predicted values is then obtained. For these predictions, the DB pension receipt variable was set to zero for all households with DB pensions rather than their actual value of one. These predicted values were then multiplied by SIPP population weights and summed to obtain a national estimate of the number of households that would be expected to receive public assistance if no households had DB pension income.
3. Since DB pension receipt was negatively associated with public assistance receipt, the difference between these two predicted values is the national estimate of the additional number of households that would be expected to receive public assistance in the absence of DB pension income receipt.

The dollar impact of DB pension receipt of public assistance expenditures is then obtained by multiplying the estimate of additional households from step 3 by the mean annual amount of public assistance received by older households in 2010 from the study data, or \$6,494. The estimated 2006 public assistance expenditure impacts of DB pension receipt reported in Table 11 are the same as those reported by Porell and Almeida (2009)⁴¹ except that the sample mean public assistance amount received by older households of \$5,373 in 2006 dollars was inflated by the CPI to produce a mean amount of \$5,903 in 2010 dollars.

Table A-4: Logistic Regression Results for Material Hardships and Public Assistance Receipt Outcomes (N=10,934)

Variables	Public Assistance		Shelter Hardship		Food Hardship		Health Hardship	
	Odds Ratio	p-value	Odds Ratio	p-value	Odds Ratio	p-value	Odds Ratio	p-value
DB pension receipt	0.05	0.000	0.19	0.000	0.05	0.000	0.19	0.000
DC income receipt	0.20	0.000	0.59	0.000	0.20	0.000	0.59	0.000
SS income receipt	0.25	0.000	1.10	0.376	0.25	0.000	1.10	0.376
Full-time employed	0.08	0.000	0.18	0.000	0.08	0.000	0.18	0.000
Part-time employed	0.34	0.000	0.50	0.000	0.34	0.000	0.50	0.000
Age	1.01	0.016	1.02	0.000	1.01	0.016	1.02	0.000
Male	0.66	0.000	0.80	0.000	0.66	0.000	0.80	0.000
Widowed	1.43	0.004	1.79	0.000	1.43	0.004	1.79	0.000
Divorced or separated	2.21	0.000	2.04	0.000	2.21	0.000	2.04	0.000
Never married	1.42	0.178	1.13	0.602	1.42	0.178	1.13	0.602
Non Hispanic Black	2.32	0.000	1.49	0.000	2.32	0.000	1.49	0.000
Hispanic	1.89	0.001	1.22	0.182	1.89	0.001	1.22	0.182
Other race	2.34	0.000	1.41	0.031	2.34	0.000	1.41	0.031
Born outside of U.S.	1.36	0.018	1.22	0.048	1.36	0.018	1.22	0.048
Household members	0.57	0.000	0.74	0.000	0.57	0.000	0.74	0.000
8 or fewer years of school completed	8.04	0.000	5.16	0.000	8.04	0.000	5.16	0.000
9-11 years of school	4.86	0.000	3.90	0.000	4.86	0.000	3.90	0.000
High school graduate or GED	2.50	0.000	2.71	0.000	2.50	0.000	2.71	0.000
1-3 years of college	1.68	0.000	1.78	0.000	1.68	0.000	1.78	0.000
Midwest	0.76	0.038	0.93	0.431	0.76	0.038	0.93	0.431
South	0.94	0.619	1.01	0.908	0.94	0.619	1.01	0.908
West	0.66	0.005	0.76	0.007	0.66	0.005	0.76	0.007
Metropolitan area residence	0.65	0.000	0.75	0.000	0.65	0.000	0.75	0.000
Pseudo- R square	0.24				0.24			

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- 6 For example, see Ghilarducci, T. (2006). *Future retirement income security needs defined benefit pensions*. (Washington, D.C.: Center for American Progress), McDonnell, K. (2008). Retirement annuity and employment-based pension income, among individuals age 50 and over: 2006. EBRI Notes 29: (1), 1-11, and Porell and Almeida (2009), op cit.
- 7 These percentages were computed from 2010 SIPP data. In regions other than the West and South only about 6.7 percent of older persons were Hispanic or Other Race.
- 8 Nationally about 67 percent of DB pension recipients in 2010 received income from a former private employer in 2010. In Michigan and Indiana these percentages were 78 percent and 87 percent, respectively. Whereas about 40 percent of DB pension recipients received income from a former public sector job nationally, about 65 percent of pension recipients in Maryland received a public sector pension. Note that public and private sector percentages exceed 100 percent because a small fraction of recipients received both public and private DB pension income.
- 9 See for example, Ghilarducci (2006), op cit., Poterba, J., Venti, S., & Wise, S. (2007b). The changing landscape of pensions in the United States. Working Paper 13381 (Cambridge, MA: The National Bureau of Economic Research), and Bender, K. & Heywood, J.S. (2010). *Out of Balance? Comparing Public and Private Sector Compensation over 20 Years*. (Washington, D.C.: National Institute on Retirement Security).
- 10 Government Accountability Office. 2010. *Management Oversight Needed to Ensure Accurate Treatment of State and Local Government Employees*. GAO-10-938. Washington, DC: Government Accountability Office.
- 11 Because of the regularity in the timing of Social Security and DB pension receipt, annual amounts were estimated based on snapshots of the amount reported in the most recent month of SIPP data. Since 401k, 403b, and IRA distributions are likely to be irregular in both timing and amounts, annual DC income amounts were derived by summing respondents' reported distributions over the previous twelve months. For further discussion of this approach see Anguelov, C., Iams, C., & Purcell, P. (2012), *Shifting Income Sources of the Aged*. Working paper, Social Security Administration.
- 12 Note that DB, DC, and SS income receipt are not mutually exclusive. Many households receive income from two or all three of these sources. The mean and median amounts are based on each subset of persons and their spouses, if any, who receive that type of income regardless of whether they receive income from the other sources.
- 13 Since the median is essentially the middle value of a distribution of income amounts ordered from smallest to largest, it is not affected by unusually large or small income amounts. When the sample mean is so much larger than the median as is the case here for DB and DC income, the median is more reflective of a typical amount than is the mean.
- 14 In addition to considerable anecdotal evidence of delayed retirement, employees have reported expectations of delayed retirement. See for example, Pearlman, B., Kenneally, K., & Boivie, I. (2011). *Pensions and Retirement Security 2011: A Roadmap for Policymakers*. (Washington, D.C.: National Institute on Retirement Security). However, it has also been argued that many older workers who lost jobs because of the 2008 financial crisis were actually forced to retire earlier than planned because of failure to find another job. See for example, Coile, C. & Levine, P. (2009). *How the Current Economic Crisis may affect Employment*. Working Paper 15395 (Cambridge, MA: National Bureau of Economic Research). Survey data on expected versus actual retirement ages among current retirees seems to bear this out. See for example, Copeland, C., Helman, R., VanDerhei, J., Mathew Greenwald & Associates. 2012. *The 2012 Retirement Confidence Survey: Job Insecurity, Debt Weigh on Retirement Confidence, Savings*. Issue Brief No. 369. Washington DC: Employee Benefit Research Institute.
- 15 Vanderhein, J., Holden, S., and Alonso, L. 2009. 401(k) Plan asset allocation, account balances, and loan activity in 2008. EBRI Issue Brief No. 335, and *ICI Perspective*, 15 (2), October.
- 16 Subjectivity is an obvious shortcoming of material hardship measures since there are no universally accepted standards for what constitutes a hardship.
- 17 See for example, Beverly, S.G. (2001b). Measures of material hardship: Rationale and recommendations. *Journal of Poverty* 5: (1), 23-41

- 18 Although households can be comprised of multiple families, the great majority of households in which the householder (similar to a head of household) is age 60 or older are comprised of only one family. Restricting the study sample to households with an older householder excludes older persons in dependent living arrangements with younger individuals, such as co-residence with a child. In such living arrangements, both family and household income amounts are unlikely to accurately reflect the level of resources allocated to the consumption needs of the older person. See the Technical Appendix for the definition of a householder.
- 19 The definition of a householder differs from the formal definition of a head of household previously employed by the U.S. Census Bureau. For exposition purposes we occasionally use the term “head of household” interchangeably with householder. In these situations the term head is used to mean the householder.
- 20 In 2006 the USDA revised its food insecurity scale. The 2004 and 2008 SIPP contain the same five questions employed in the prior USDA food insecurity scale.
- 21 The “food insecurity with hunger” and “food insecurity without hunger” categories of the former USDA food insecurity scale were combined creating a single category of “food insecurity with or without hunger.”
- 22 This differs from the findings of Porell and Almeida (2009) for 2006. They found that, on average, public assistance recipient households with DB pension income received about \$1,121 (in 2010 dollars) less annually relative households without pension income. The reason for this discrepancy is not obvious since the relative rates of public assistance receipt between households with and without DB pension income were similar in both years.
- 23 These results are consistent with the empirical literature on racial differences in participation rates welfare programs even after adjustments are made for need factors. For example, see Kaiser. L. 2008. Why do low-income women not use food stamps? Findings from the California Women’s Health Survey. *Public Health Nutrition* 11: (12), 1288-1295.
- 24 The decline in the rate of public assistance receipt among older households without pension income may be due, at least in part, to the two percentage point increase in the percentage of older households in which the householder worked at least 30 hours per week in 2010 (28.4 percent) than in 2006 (26.3 percent).
- 25 Recall that Table 5 showed that whereas 15.8 percent of older households without any DB pension income were classified as poor, only 1.7 percent of DB income recipient households were similarly classified. Although DB pension receipt should contribute to this disparity in poverty rates, it is unlikely to fully account for it. Relative to older households without any DB pension income in 2010, those with DB pension income were more likely to have a head that was male (46 percent vs 42 percent), married (54 percent vs 41 percent), had completed eight or fewer years of education (11 percent vs 4 percent), and had worked in a management/professional occupation (33 percent vs 23 percent). Heads of household without pension income were less likely to have little or no regular work history (3 percent vs 17 percent), to be divorced/separated (11 percent vs 22.4 percent), Black (9.6 percent vs 12.4 percent), Hispanic (2.6 percent vs. 6.1 percent), foreign-born (5 percent vs 12 percent), and live in a home where English is not regularly spoken (1 percent vs 5 percent). These data suggest that older households with DB pension income will have a lower risk of poverty than their counterparts without such income due to many factors other than pension receipt.
- 26 Other researchers have similarly employed pension dummy variables in statistical models of wealth accumulation. For example, see Gustman, A.L., & Steinmeier, T.L. (1998), *Effects of pensions on savings: Analysis of data from the Health and Retirement Study*. Working Paper 6681 (Cambridge, MA: The National Bureau of Economic Research). However, it has been argued that individuals with stronger “tastes for savings” will tend to seek out jobs with richer pension benefits. Since tastes for savings cannot be reliably measured and specified in statistical models, the positive correlation between unspecified measures of tastes for savings and having a pension plan will bias estimates of the effects of pensions on outcome measures. That is, the effects attributed to pensions will reflect the effects of both pensions and tastes for savings. Unfortunately, the basic premise that savers seek out jobs with retirement benefits cannot yet be tested empirically with any rigor without a reliable measure of tastes for savings. See Gale, W. 1999. *The Impact of Pensions and 401(k) Plans on Saving: A Critical Assessment of the State of the Literature*, Washington, D.C.: The Brookings Institution and Munnell, A.H., and Sunden, A. 2004. *Coming Up Short: The Challenge of 401(k) Plans*. Washington, DC: Brookings Institution Press for discussions of the issue and references for individual empirical studies. Similar to other research, we have no measure of tastes for savings. The best we can do to lend credibility to our results is to specify as many covariates in our model as theory and data permit, and to perform sensitivity analyses. These are discussed in the Technical Appendix.
- 27 Impacts on poverty status were also estimated by subtracting the received amount of retirement income from total household income and comparing the residual household income to the FPL for each household. The alternative estimates for DB and DC pension income are very similar to those reported here. For example, without DB pension income an additional 4.65 million older households are classified as poor or near-poor if Social Security income is subtracted from their household income. However, the alternative subtraction method produces much greater estimated impacts of Social Security income receipt on poverty status. Subtracting Social Security income from total household income increases the number of older households classified as poor by about 10.4 million. This amount is more than double the estimate obtained from the statistical model. Since Social Security comprises such a large proportion of household income its subtraction from household income will naturally place many older households in poverty. The estimated impacts of Social Security reported in Table 9 control for differences in household characteristics that should affect household income. These estimates are based on expected differences in household income between otherwise identical older households with and without Social Security income. The smaller estimated impact of Social Security income receipt is presumably the result of “otherwise identical” households having other sources of income that would offset the some of the loss of Social Security income.

- 28 The much smaller impacts of DC versus DB income receipt are due to a number of factors, including a lower prevalence rate of DC income receipt, greater income from other sources among DC income recipients, and differences in household characteristics that affect expected income.
- 29 The estimated coefficients for DC income and Social Security receipt were also smaller than those for DB pension receipt. Since theoretically the risk of material hardships should be lower among households with DC income and Social Security income, there may be insufficient statistical power in the study sample to discern their more modest impacts on hardship risk.
- 30 The estimates for food hardships for 2006 in Table 10 differ from those reported by Porell and Almeida (2009) because hardships are defined differently. The estimates and projections in Table 10 are based on a stricter classification of “food insecurity.” Whereas the food hardship projections reported by Porell and Almeida only required that a household report one or more of five potential indicators of a food hardship, the USDA food insecurity measure used here requires that a household report of two or more of the same five indicators.
- 31 In contrast, the rate of public assistance receipt among DB pension recipient households was only about one-third of the rate among older households without pension income in both years.
- 32 Porell and Almeida (2009), op cit.
- 33 Each survey wave contains data for four months. Since topical module questions are asked in reference month 4 of any survey wave, core file data were selected for the same reference month.
- 34 The definition of householder and other terms used by the U.S. Census Bureau can be found on the following link <http://www.census.gov/cps/about/cpsdef.html>. Although use of the term “head of household” was discontinued in 1980, in the main body of the report we occasionally use the term in phrases such as “households headed by women.” In these situations we mean households with a female householder.
- 35 See <ftp://ftp.bls.gov/pub/special.requests/cpi/cpi.txt>.
- 36 See the U.S. Census Bureau, Current Population Survey, 2011 *Annual Social and Economic Supplement*. http://www.census.gov/hhes/www/cpstables/032011/hhinc/new01_001.htm.
- 37 Porell and Almeida (2009), op cit.
- 38 The U.S. Department of Agriculture no longer uses the food insecurity measure employed here. It revised its food insecurity scale in 2008. The former USDA scale employed here is based on the five questions noted above that are contained in the 2008 SIPP. While the USDA scale distinguishes between food insecurity with hunger and without hunger, these categories are combined together yielding a measure of “food insecurity.”
- 39 Porell and Almeida (2009), op cit.
- 40 Some additional variables were specified in models that were estimated to test the sensitivity of the empirical results.
- 41 Porell and Almeida (2009), op cit.

WHO WE ARE & WHAT WE DO

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The National Institute on Retirement Security is a non-profit research and education organization established to contribute to informed policymaking by fostering a deep understanding of the value of retirement security to employees, employers, and the economy as a whole.

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Through our activities, NIRS seeks to encourage the development of public policies that enhance retirement security in America. Our vision is one of a retirement system that simultaneously meets the needs of employers, employees, and the public interest. That is, one where:

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