How Well Are Social Security Recipients Protected from Inflation?

by

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Abstract: Social Security is widely believed to protect its recipients from inflation because benefits are indexed to the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W). However, the CPI-W may not accurately reflect the experience of retirees for two reasons. First, retirees generally have higher medical expenses than workers, and medical costs, in recent years, have tended to rise faster than the prices of other goods. Second, even if medical costs did not rise faster than the prices of other goods, as retirees aged, their medical spending would still tend to increase as a share of income; that is, each cohort of retirees would still see a decline in the real income left over for non-medical spending. We show that Social Security benefits net of average out-of-pocket medical expenses have declined relative to a price index for non-medical goods by almost 20 percent for men, and almost 27 percent for women, in the 1918 birth cohort. We also explore the extent to which indexing Social Security benefits to the CPI-E, an experimental measure of inflation for the elderly, would change these results.

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I. Introduction

Social Security is widely believed to protect its recipients from a number of risks, including length of life and inflation, due to the inflation-indexed life annuity form of the benefit. The inflation protection comes from the fact that Social Security benefits are indexed to the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W). The CPI-W is based on the spending patterns of a broad group of workers, representing approximately 32 percent of the U.S. population. However, the CPI-W may not accurately reflect the experience of retirees for two reasons. First, retirees generally have higher medical expenses than workers, and medical costs, in recent years, have tended to rise faster than the prices of other goods. Second, even if medical costs did not rise faster than the prices of other goods, individual retirees would still, on average, need to devote a larger share of income to medical spending as they aged. This means that individual retirees would still see a decline in the real income they have left over for non-medical spending. In this paper, we explore both of these factors and quantify the extent to which they might undermine the inflation protection provided by the indexation of Social Security benefits.

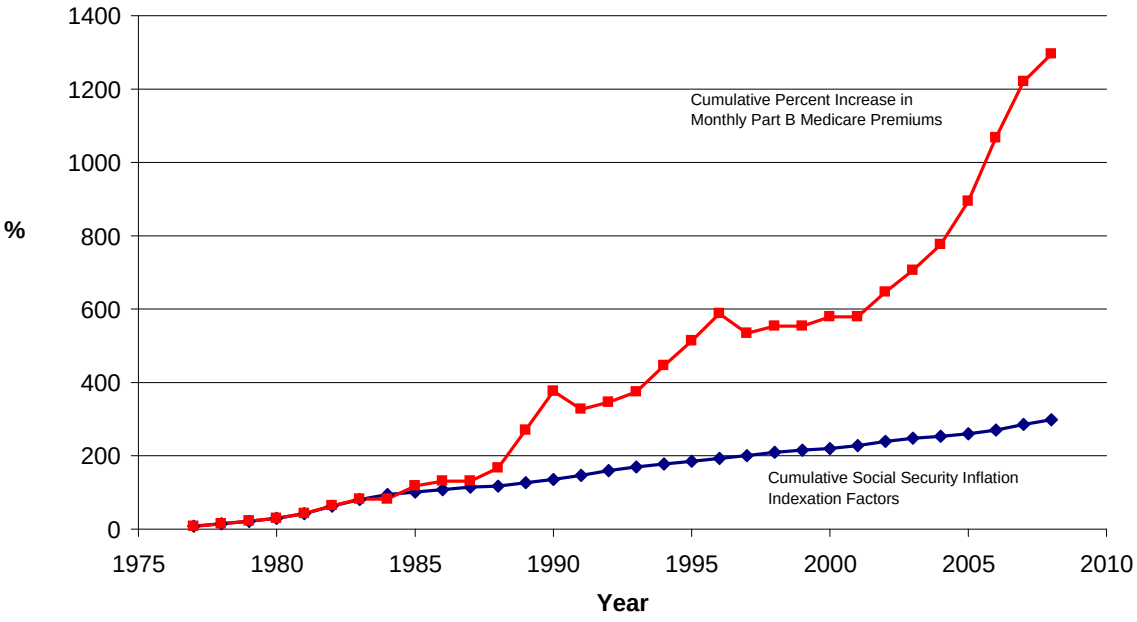
Our analysis is related to the literature on cost of living indices for the elderly. Most recently, Burdick and Fisher (2007) and Stewart (2008) compare the CPI-W to the CPI-E, an experimental consumer price index for the elderly, produced but not published by the Bureau of Labor Statistics (BLS). The CPI-E is intended to reflect the experience of Americans aged 62 and older. The main difference between the CPI-E and the CPI-W lies in the weights for the various expenditure categories; the weights in the CPI-E are based on the spending patterns of the elderly. The CPI-E has increased faster than the

CPI-W over the past twenty years, due primarily to the relative rise in health costs, and the fact that the elderly spend more on health care than the nonelderly, even after taking into account the availability of Medicare. Hobijn and Lagakos (2003) suggest that if Social Security benefits began to be indexed to the CPI-E instead of the CPI-W, the Trust Fund depletion date would be affected by about five years. This result alone indicates that there are important differences between the two indices, and that the choice between them is consequential. Other relevant papers are by Boskin and Hurd (1982), who compute separate price indices for elderly and nonelderly households even before the CPI-E was constructed, and List (2005), who reviews the issues regarding cost-of-living indices for the elderly, but without as much of a focus on health spending.

In carrying out our analysis, we examine two major components of medical costs. First, most Social Security recipients are also participants in Medicare Part B. The monthly premiums for Part B, recently means-tested, go up with the increasing costs of health insurance. These premiums are automatically deducted from Social Security retirement benefits. This is dramatically shown in Figure 1, which illustrates that the monthly premium of Part B has gone up approximately 1,300 percent since 1976 (i.e. the amount is 14 times higher than it was), while the automatic cost-of-living adjustments have accumulated to just under 300 percent. Moreover, with means-adjusted Part B premiums introduced in 2007, very high-income individuals (with 2009 modified adjusted gross income of more than $213,000) saw their Medicare Part B monthly premiums go from $45.50 in 2000 to $308.30 in 2009. The increase for these very high-income people clearly wiped out the inflation protection of their monthly Social Security benefit. Second, retirees often have substantial out-of-pocket medical expenses,

including Medicare deductibles and co-pays, and payments for services with limited Medicare coverage, such as nursing home care.

Figure 1: Cumulative Percent Increase in Social Security Inflation Adjustments and Medicare Part B Premiums since 1976



We show that, after subtracting both of these components of health spending from Social Security benefits, the leftover income for a Social Security participant with average out-of-pocket medical spending has, in fact, been increasing more slowly than a price index of non-medical goods and services. For example, the average man born in 1918 has seen his Social Security benefit, net of medical expenses, rise from $541.84 at the end of 1983 (when he was 65) to $866.80 at the end of 2007 (when he was 89). However, if his net-of-medical-expenses benefit had kept pace with inflation in the prices of non-medical goods over that time period, he would have had $1080.90 in 2007 after medical expenses. That is, his net-of-medical-spending benefit has declined by almost 20 percent relative to the non-medical goods price index. Similarly, the average woman

born in 1918 has seen her net-of-medical-expenses benefit decline by almost 27 percent relative to the non-medical goods price index. Of course, these results assume no other income besides Social Security, but a sizeable fraction of the elderly depend on Social Security for the majority of their income: 64 percent of beneficiaries rely on Social Security for 50 percent or more of their income, and 35 percent of beneficiaries rely on Social Security for 90 percent or more of their income.[1]

We also show that if Social Security benefits had been indexed to the CPI-E instead of the CPI-W, men born in 1918 would have $957.49 net of medical expenses, falling only 11 percent short relative to the non-medical goods price index. Similarly, women born in 1918 would fall only 18 percent short relative to the non-medical goods price index. The reason indexing to the CPI-E still does not fully compensate retirees for inflation is that, even if medical costs remained constant over time for the average elderly person, each individual elderly person would still be aging. As retirees age, they tend to spend more on out-of-pocket medical expenses, crowding out non-medical spending. Thus, each cohort's Social Security benefit net of average out-of-pocket medical spending would tend to decline in real terms even if the price of medical care rose at the same rate as the prices of other goods, or alternatively, even if the average retiree's real net Social Security benefit remained constant.

Both the CPI-W and CPI-E are subject to the usual criticisms of consumer price indices. In particular, neither accounts adequately for technological progress or for consumer substitution among goods. The CPI-E is subject to additional criticisms, including the fact that it overlooks senior citizen discounts and differences in the retail

[1] Social Security Administration, "Fast Facts and Figures About Social Security," available online at http://www.ssa.gov/policy/docs/chartbooks/fast_facts/2009/fast_facts09.html.

shopping patterns of the elderly, and is based on a relatively small sample.[2] The failure to account properly for technological progress can be quite serious when it comes to health care. Higher medical costs may reflect the consumption of better quality medical care, and retirees may be better off even if they are left with less to spend on other non-medical goods. Therefore, we emphasize that we cannot draw any conclusions about changes in the utility of Social Security recipients from this analysis. All we show is that Social Security benefits may not be fully inflation-indexed in the sense that recipients with average out-of-pocket medical spending cannot, from one year to the next, purchase the same bundle of non-medical goods with their Social Security benefits.

Our methodology and results are described in more detail in Sections II and III, and section IV offers concluding remarks.

II. Methodology

Our analysis proceeds in several steps. First, we estimate a model to predict average out-of-pocket medical spending as a function of age, gender, and race. Second, we estimate average Social Security benefits broken down by age, gender, and race. Third, we subtract Medicare Part B premiums, as well as our estimates of average out-of-pocket medical expenses, from these average benefits. Finally, we compare the rate of increase in the remaining amount (non-medical spending) to the CPI-E for all items less medical expenses. Each of these steps is detailed below.

A. Out-of-pocket Spending

We use Health and Retirement Study (HRS) data from 1995, 1996, 1998, 2000, 2002, 2004, and 2006 to model the age profile of out-of-pocket medical expenses. Our

[2] See Stewart (2008) and Budrick and Fisher (2007) for a more detailed discussion.

analysis is limited to these years because the definition of out-of-pocket expenses is relatively consistent across interviews starting in 1995. The sample includes all individuals aged 65-89. The HRS collects data on a wide range of out-of-pocket medical expenses including payments for doctor and dentist visits, hospital and nursing home stays, outpatient surgery, prescription drugs, home health care, and special facilities. Respondents are asked about their total out-of-pocket spending over the two years prior to the interview; we divide this amount by 24 to arrive at monthly out-of-pocket spending. One shortcoming of the HRS data is that it does not include health insurance premiums, including those for Medicare Part B. Later in the analysis, we add Part B premiums to predicted out-of-pocket expenditures; however, we are unable to include premiums paid for private health insurance.

We regress monthly total out-of-pocket spending (the sum of all the components listed above) on a variety of demographic variables, including age, age-squared, gender, and race (white non-Hispanic, black non-Hispanic, or other race). The results from our three basic specifications are shown in Table 1.[3] Specification 1 does not include any controls for race, but allows the level and shape of the age profile of spending to vary by gender by including a gender dummy interacted with the age variables. Specification 2 adds race dummies, allowing the level, but not the shape, of the age profile to vary by race. Specification 3 includes a full set of interactions among race, age, and gender, allowing each race-gender combination to have a different level and shape. All

[3] Other studies use the log of medical expenses as the dependent variable (e.g., French and Jones 2004). We also estimated regressions using the log of out-of-pocket spending as our dependent variable. We prefer the linear specifications because, when aggregated, they produce results that most closely match the actual aggregate values of out-of-pocket spending. The semilog regression results are available upon request.

specifications include a set of year dummies, which allow the age profiles to shift (generally upwards) over time.

Table 1: Predicting Out-of-pocket Medical Spending

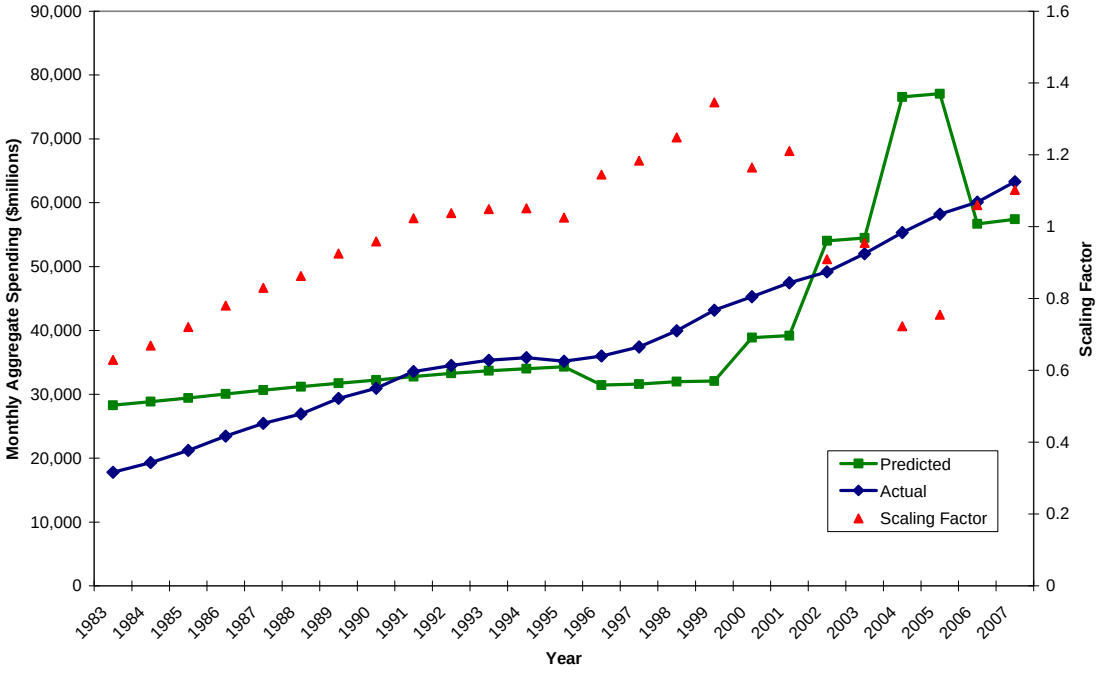
Specification	(1)	(2)	(3)
Age	-20.4*	-21.5*	-22.3*
	(11.3)	(11.3)	(12.6)
Age^2	.155**	.161**	.169**
	(.074)	(.0739)	(.0824)
Female	1500***	1568***	2236***
	(557)	(557)	(627)
Female*Age	-40.4***	-42.1***	-60***
	(14.6)	(14.6)	(16.5)
Female*Age^2	.273***	.284***	.404***
	(.0956)	(.0955)	(.107)
Black		-40.4***	-280
		(6.01)	(1341)
Other Race		-61.1***	-700
		(7.08)	(1592)
Interactions	No	No	Yes
R^2	0.011	0.013	0.014

Notes: All specifications include year dummies. Standard errors in parentheses. Specification 3 also includes all three-way interaction terms between age, gender, and race. N=58,004.
* significant at the 10% level
** significant at the 5% level
*** significant at the 1% level

We use specification 1 to construct a preliminary age profile of out-of-pocket spending for men and women aged 65-84 in each year from 1983 through 2007. Predicted values for years not covered by our HRS data are assigned the intercept for an adjacent year in the HRS; for example, 1985 is given the intercept for 1995, and 1997 is given the intercept for 1996. Clearly we would expect our predicted profiles to be more accurate for the years covered by the HRS data. However, as long as the predicted *relative* values of spending for the age-gender groups are accurate, we can scale the levels to match the overall level of out-of-pocket expenditures. We do this by

aggregating our predicted values using population counts for men and women of each age group, and then dividing actual aggregate expenditures for the 65-84 age group in each year by our predicted aggregate expenditures.[4] These ratios of actual to predicted aggregate expenditures are our "scaling factors." We then multiply our preliminary predicted age profiles by the scaling factor for the appropriate year. Figure 2 shows the predicted and actual aggregate expenditures for the 65-84 age group, as well as the scaling factors for each year. The scaling factors are quite close to 1 for most of the years covered by the HRS data.

Figure 2: Actual and Predicted Aggregate Out-of-Pocket Medical Spending, Ages 65-84



[4] Population counts were obtained from the Social Security Administration, and actual aggregate expenditures from the Centers for Medicare and Medicaid Services' National Health Expenditure data. Aggregate out-of-pocket expenditures by age are reported for years 1987, 1996, 1999, 2002, and 2004. To impute out-of-pocket expenditures for additional years, the 2004 values were adjusted by the rate of growth of aggregate out-of-pocket payments for all ages. This procedure yielded values that closely match the actual values in the years where expenditures by age were reported.

For example, actual aggregate expenditures in 2006 were 1.06 times the aggregate amount predicted by our regression model for 2006. Our model also predicts that a 70-year-old male has average out-of-pocket expenses of $125.64 per month in 2006. We multiply this amount by the scaling factor of 1.06 to obtain $133.21, our final predicted value for average out-of-pocket expenditures of 70-year-old males in 2006. Thus, we construct our age profiles by using our regression to predict the relative values of average out-of-pocket expenditures for the age-gender groups, and then choosing the levels to match actual aggregate expenditures in the 65-84 age group.

We repeat this procedure for specification 3 to obtain the age profiles of out-of-pocket spending for four groups: white males, white females, black males, and black females.[5] For the breakdown by race, we chose specification 3 rather than 2 because there appear to be substantial differences in the shapes of the age profiles across races, and the interactions are jointly significant at the 1 percent level. Our results – the scaled, predicted age profiles – are presented and discussed in the next section.

B. Social Security Benefits

The Social Security Administration's Statistical Supplement for 2008 contains data (in Table 5.A1.1) on the average Social Security benefit received by retired workers in December 2007, broken down by race, gender, and single year of age. We include retired worker benefits only, not disability, survivor, or spouse benefits. We then use the

[5] The procedure is identical to the one we followed for specification 1, except that we scale our model's predicted out-of-pocket expenditures to match aggregate expenditures for individuals aged 65 to 74. This is because our population counts by race, gender, and age come from the Current Population Survey, in which age is topcoded at 80 for many years in our sample period. As we cannot know whether an individual with a topcoded age is younger than 85, we cannot use the aggregate amounts for the 65-84 age group.

CPI-W to "backtrack" these average benefits to the year in which the group was aged 65. That is, the benefit for a group aged i in 2007 in any year $t \geq 2072 - i$ is

$$B_t^i = \frac{B_{2007}^i}{\prod_{s=t}^{2006}(1+COLA_s)},$$

where B_t^i is the benefit received by group i in year t, and $COLA_s$ is the cost-of-living-adjustment, or the percentage by which the benefit in year s is increased to arrive at the benefit in year $s+1$. These amounts are taken to represent what the individuals who are currently in group i would have received in previous years.

Clearly, there is a potential for sample selection bias. Our analysis for each cohort is based on individuals who survived until 2007. There is evidence to suggest that there are substantial differentials in mortality rates across income groups (see, e.g., Waldron 2007; Cristia 2007). Thus, the individuals present in our data are likely to be among the higher earners in their cohort, who are receiving above-average Social Security benefits. This effect is more likely to be important for older cohorts. Additionally, not all of the individuals in the 2007 groups would have started receiving benefits at age 65; some may have delayed until age 70 and received a credit. A final issue is that we do not account for individuals who may have switched from receiving a retirement benefit to receiving a survivor's benefit upon the death of a spouse. We assume that the benefit received in 2007 is the benefit received at retirement plus the subsequent COLAs. However, it is possible that a retiree who experienced the death of a spouse might have switched to receiving a survivor's benefit (two-thirds of the deceased spouse's primary insurance amount) if the survivor's benefit was larger than the initial worker-only benefit.

C. Net-of-Medical Expense Benefits

From the average benefits by race, age, and gender, we subtract the premiums paid for Medicare Part B and our predicted out-of-pocket spending on medical care for the relevant age-race-gender group. Medicare Part B premiums are automatically deducted from Social Security payments for those Medicare beneficiaries who do not opt out of Part B (inpatient insurance). This includes the vast majority of Medicare beneficiaries. We ignore the means testing for Part B effective in 2007 and assume everyone pays the standard Part B premium.[6] This allows us to track the growth of nominal benefits net of average out-of-pocket medical expenses over time for each cohort within a race-gender group. We compare this to the growth in the CPI-E for all items less medical expenses.[7] The CPI-E net of medical expenses tells us what our groups would need for non-medical expenses at the end of 2007 in order to have the same purchasing power as they did when they were age 65. Additionally, we compute the path of each group's Social Security benefit, starting at age 65, if benefits had been indexed to the CPI-E instead of the CPI-W. This tells us to what extent indexation to the CPI-E would have protected retirees from inflation.[8]

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[6] Means testing was in effect in 2007 for individuals with a modified adjusted gross income over $80,000.

[7] We are grateful to Ken Stewart of the BLS for providing us with unpublished CPI-E data. We have the CPI-E for all items less medical care for 1987-2007. We estimate the values for 1983-86 as follows: we have the weights for medical care in the CPI-E for 1987, 2007, and 2008 (the BLS did not retain historical weights for other years). We fit a quadratic equation through these three values (with year as the independent variable), and use this equation to predict the weights for the other years. Using the fitted weights, we solve for the growth rate of the CPI-E for all items less medical care in the formula $g_t = w_{t-1} g_t^m + (1 - w_{t-1}) g_t^{nm}$, where g_t is the growth in the CPI-E from year t-1 to year t, g_t^m is the growth in the CPI-E for medical care from year t-1 to year t, g_t^{nm} is the growth in the CPI-E for all items less medical care from year t-1 to year t, and w_{t-1} is the weight on medical care in year t-1. Using the same procedure for the CPI-W yields estimates of the CPI-W for all items less medical care that are fairly close to the actual values.

[8] The COLAs applied by the SSA are based on the change in the CPI-W from the third quarter of the previous year and the third quarter of the current year. For the CPI-E, we only have the December-to-December (rather than the Q3-to-Q3) changes; therefore, all our analysis using the CPI-E uses December-

III. Results

A. Predicted Out-of-pocket Expenses

Figures 3 and 4 show our simulated average out-of-pocket medical spending for all men and all women. Figures 5-8 show simulated average out-of-pocket medical spending for black men, black women, white men, and white women separately. The two solid lines represent the age profiles of spending in 1987 and 2007. However, as a particular cohort ages, it moves from the curve for one year to the curve for the next year. Therefore, the age profile for a particular cohort is steeper than the age profile across cohorts in a given year. The average out-of-pocket medical spending of the cohorts born in 1918 and 1928 are depicted by the dashed lines. The vertical bars represent the standard errors of our predicted values.[9]

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to-December changes. While these may vary from the Q3-to-Q3 changes for particular years, the cumulative effect over the years should be approximately the same.

[9] We assume that the standard error of the adjusted prediction is equal to the scaling factor multiplied by the standard error of the original prediction.

Figure 3: Simulated Out-of-Pocket Medical Spending by Year and Age
All Males

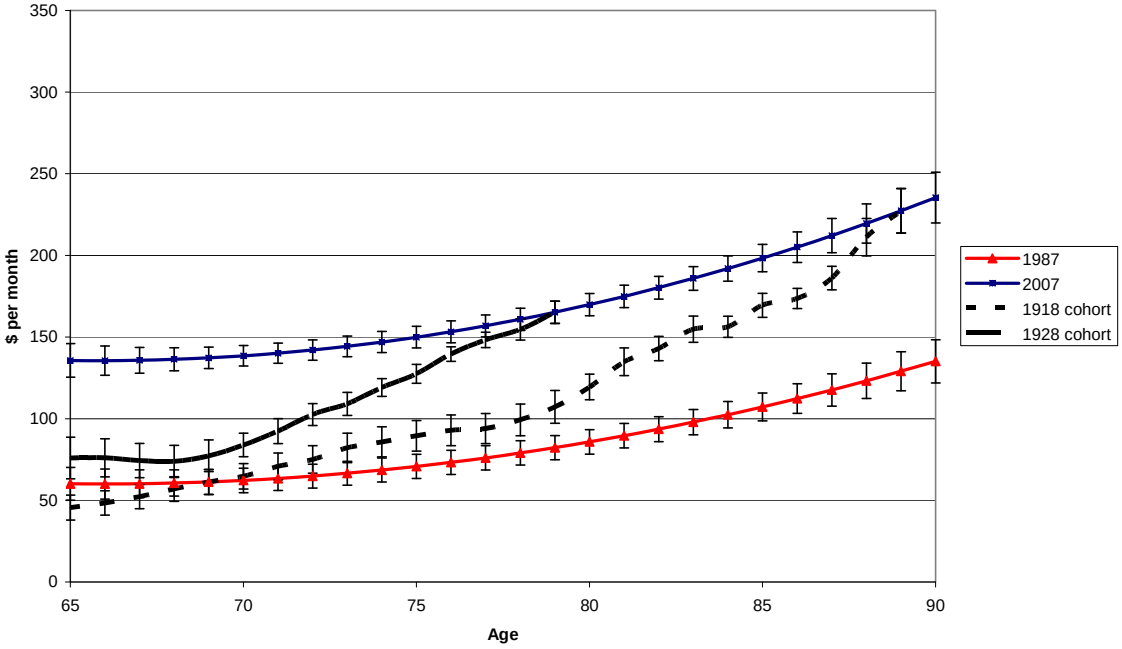


Figure 4: Simulated Out-of-Pocket Medical Spending by Year and Age
All Females

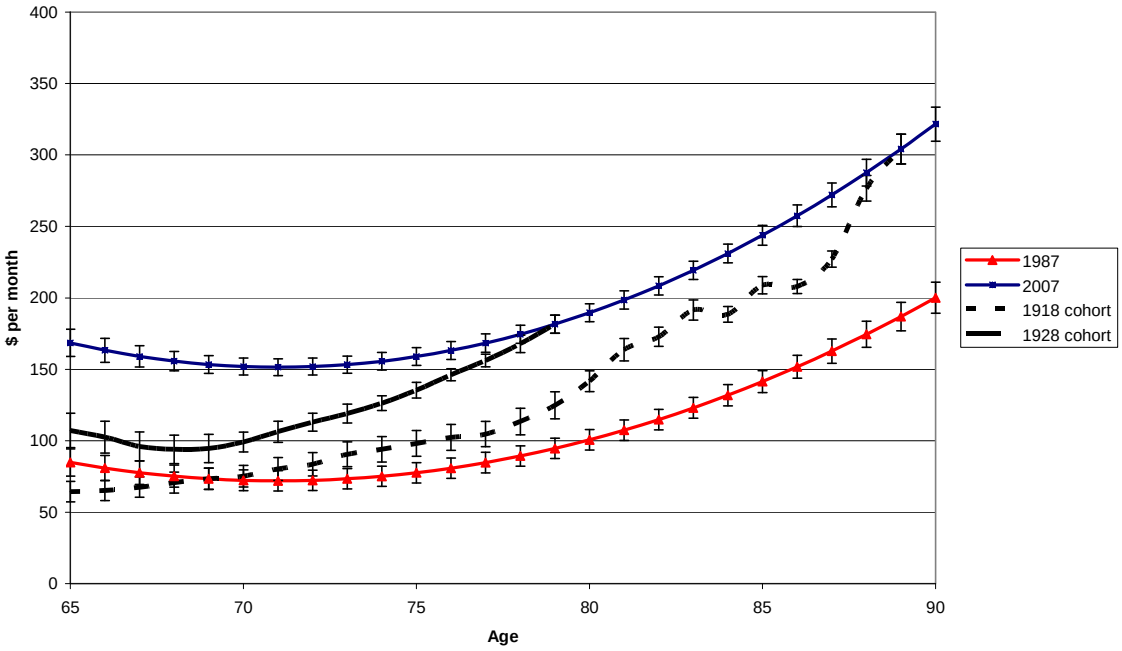


Figure 5: Simulated Out-of-Pocket Medical Spending by Year and Age
White Males

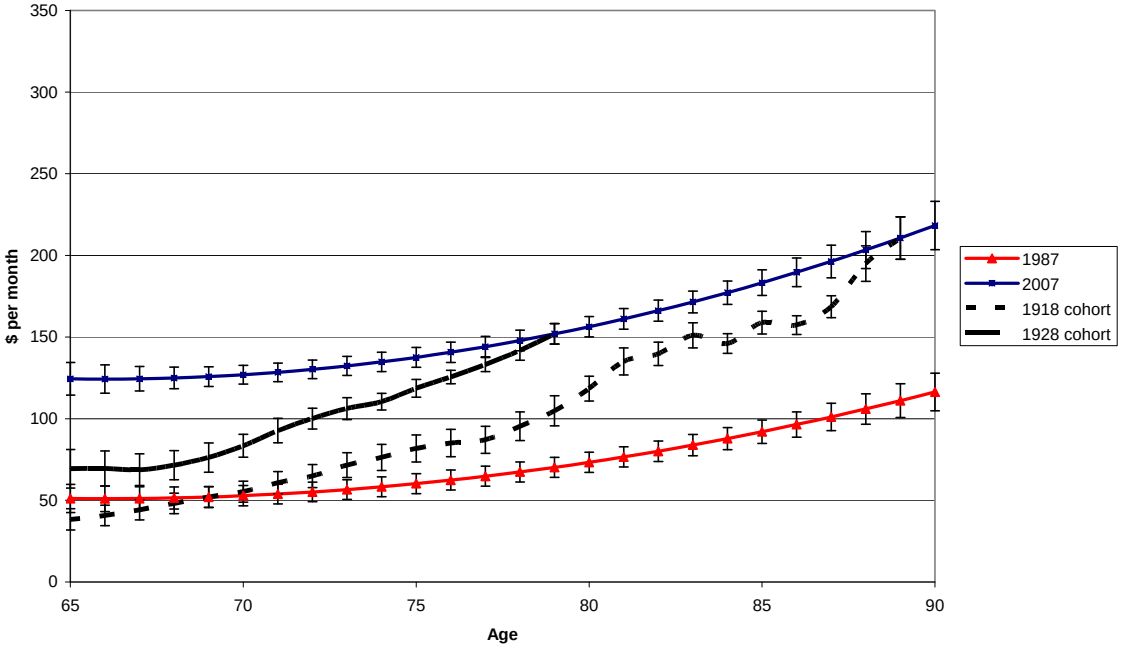


Figure 6: Simulated Out-of-Pocket Medical Spending by Year and Age
White Females

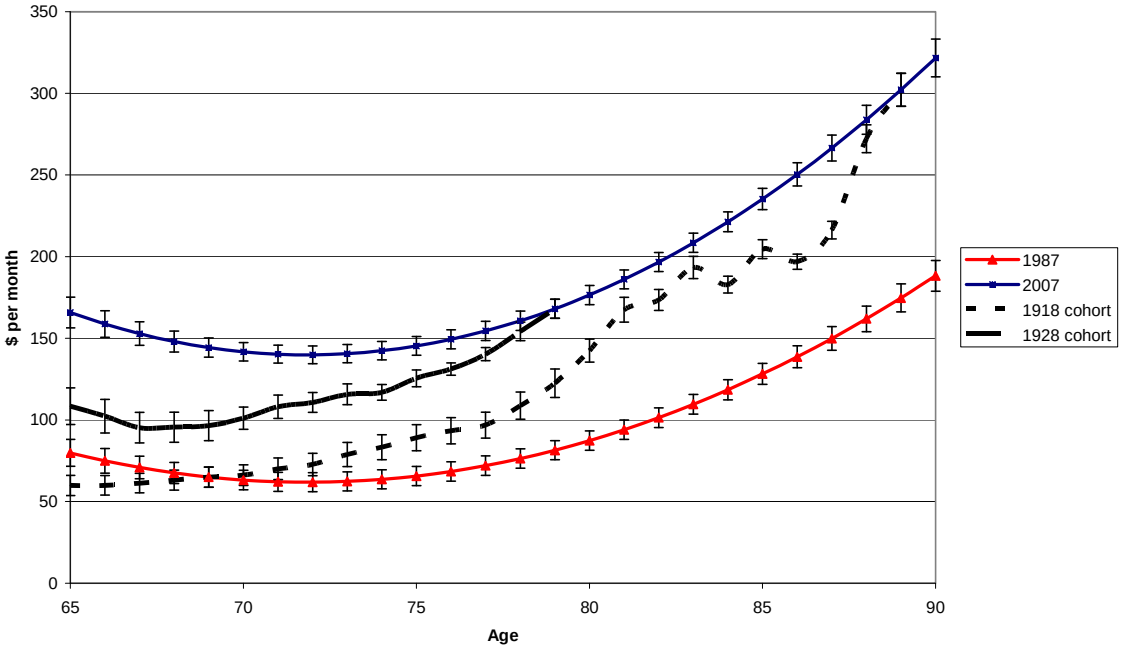


Figure 7: Simulated Out-of-Pocket Medical Spending by Year and Age
Black Males

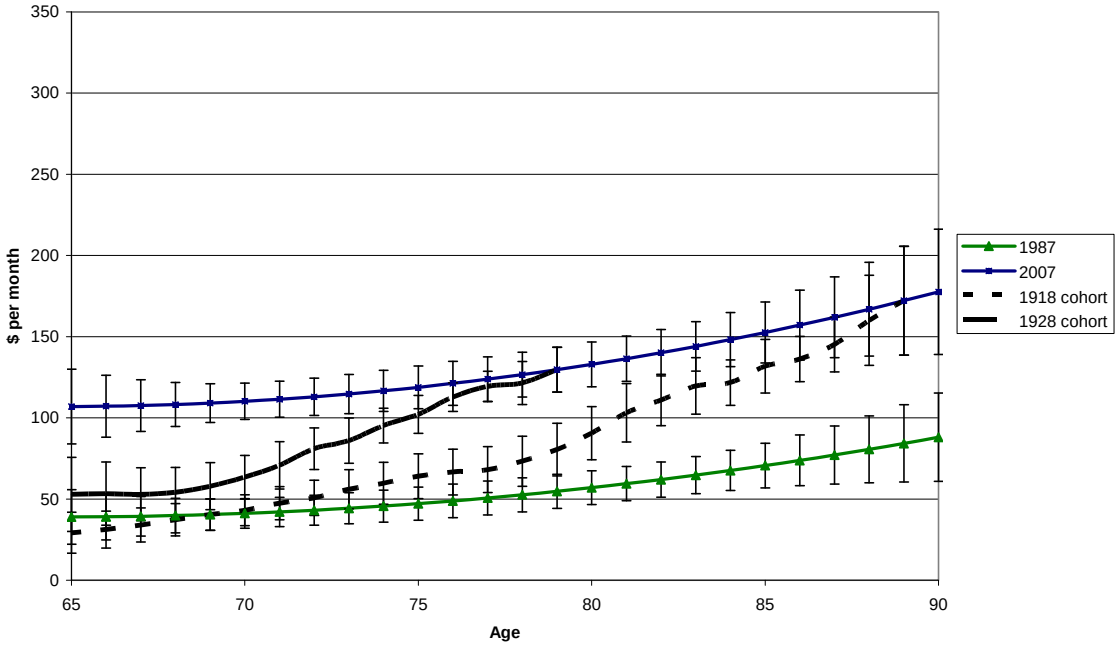
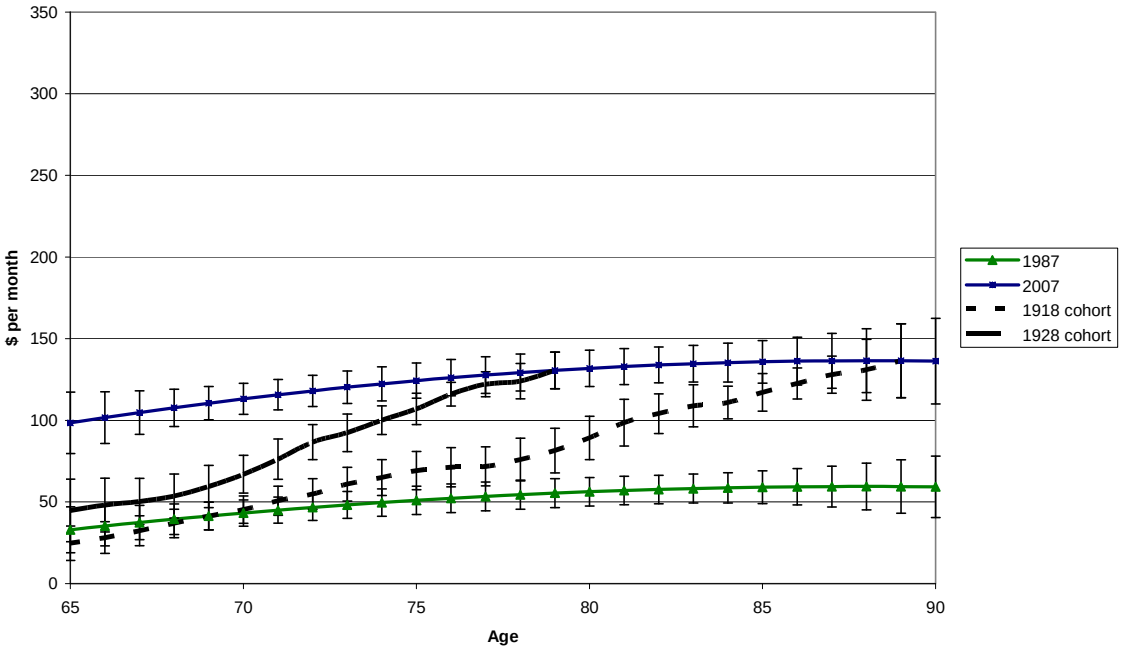


Figure 8: Simulated Out-of-Pocket Medical Spending by Year and Age
Black Females



Overall, average out-of-pocket expenses are higher – and rise faster – for women than for men. This result is consistent with other studies of medical expenditures (e.g., French and Jones, 2004; Di Nardi, French, and Jones, 2009). Di Nardi, French, and Jones (2009) show that, after controlling for age, income, and health status, men spend about 20 percent less than women on medical care. Our results suggest that this relationship appears to be driven primarily by white men and women; black women tend to have a lower and flatter profile of expenses than black men.

It is not clear why women overall seem to have higher and steeper expense profiles than men. One possibility is that, because women tend to outlive men and husbands tend to be older than their wives, there are more elderly widows than widowers. Older retirees living alone may have higher out-of-pocket medical expenses because, to some extent, a spouse can substitute for paid caregivers. In our 2006 data, 56 percent of men aged 85 and above are married, compared to only 17 percent of women in the same age group. Men aged 85 and above had mean out-of-pocket medical expenses of $197 per month, compared with $276 per month for women in the same age group. However, married women aged 85 and above had monthly expenses of only $181, compared to $295 for single women. Single men's expenses were only slightly higher than those of married men – $198 versus $196 per month.[10] This provides some support for the hypothesis that differences in marital status can partly explain the observed gender differences.

[10] For this calculation, married is defined as either married with a spouse present, or partnered. Single is defined as married with an absent spouse, separated, divorced, widowed, or never married. We classify individuals who are married with an absent spouse as single because we are trying to capture the impact of living alone. There are 410 men and 768 women aged 85 and above in the 2006 sample.

One possible explanation for the flatness of the profiles for African-Americans relative to whites is that elderly African-Americans tend to have lower incomes than elderly whites. Current Population Survey data suggest that 7.9 percent of whites aged 65 and older are living in poverty, in comparison to 22.7 percent of African-Americans aged 65 and older. Thus, elderly whites are more likely to have income and assets that can be used to finance high medical expenses. Indeed, Di Nardi, French, and Jones (2009) show that the age profile of medical expenses is much steeper for higher-income individuals, with differences in spending across income groups becoming far more pronounced at older ages. For individuals in their mid 70s, medical expenses do not vary much with income; however, at age 100, individuals in the top quintile of lifetime income spend more than 10 times as much as individuals in the bottom quintile.

We also note that our simulations of average out-of-pocket medical spending mask a large amount of variation in actual out-of-pocket medical spending experienced by the elderly. For example, French and Jones (2004) show that individuals face considerable risk of catastrophic health costs. Our regression results show that only a small part of the variation in out-of-pocket medical spending is explained by age, gender, and race. The level of out-of-pocket medical expenditures for any one individual may vary greatly from our predictions, and any given individual is also likely to experience more variation from year to year than our averages by race, gender, and age suggest.

B. Benefits Net of Average Out-of-Pocket Medical Expenses

To summarize our results, we focus on the experience of two cohorts – individuals born in 1918, and individuals born in 1928. The former cohort is 89 at the end of 2007, and the latter is 79 at the end of 2007.

Figures 9 and 10 depict the experience of the 1918 cohort of men and women. In each graph, the solid black line shows the evolution of the cohort's actual Social Security benefit. The dashed black line shows the evolution of the cohort's Social Security benefit if the benefit had been indexed to the CPI-E. The solid gray line shows the actual benefit net of average out-of-pocket medical spending received by the cohort. Finally, the dashed gray line shows the benefit net of average out-of-pocket medical spending that would be required to keep pace with inflation in the prices of non-medical goods (as measured by the CPI-E for all goods less medical care).

Figure 9: Difference in monthly benefits using CPI-W and CPI-E for men aged 89 in December 2007

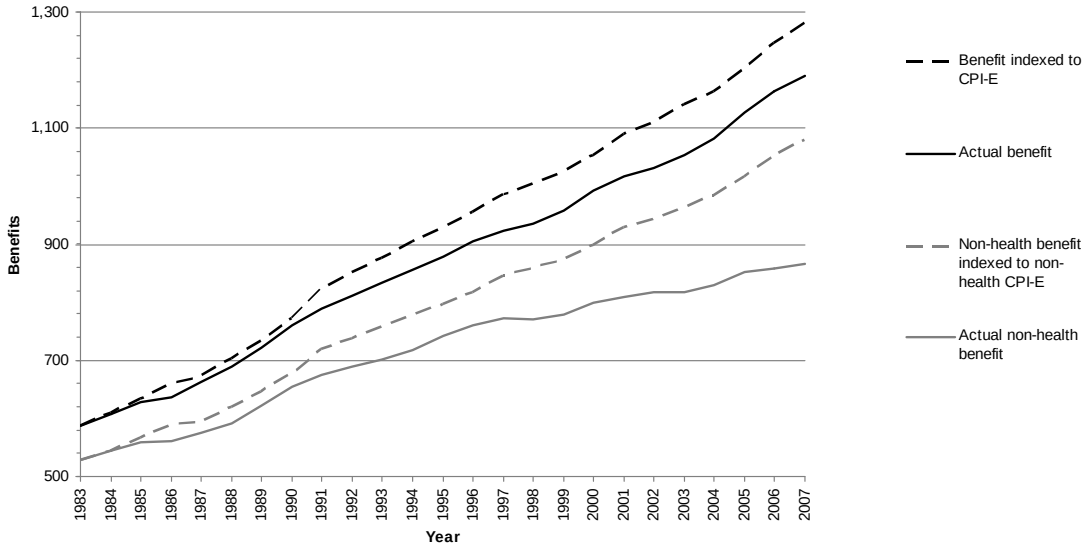
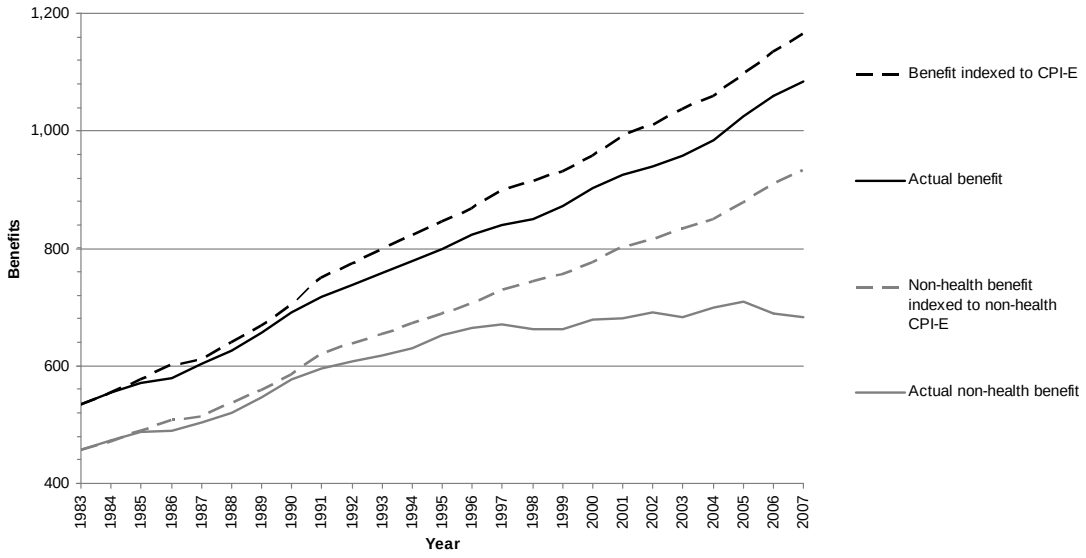


Figure 10: Difference in monthly benefits using CPI-W and CPI-E for women aged 89 in December 2007



These graphs suggest that benefits net of average out-of-pocket medical spending have risen more slowly than the price index for non-health spending. The same pattern emerges for the four race-gender groups (graphs are not shown), and for the 1928 birth cohort. The results for these other groups are summarized in Table 2. The second column of the table shows, for each group, the actual monthly benefit net of average out-of-pocket medical expenses at age 65. The third column shows the actual monthly benefit net of average out-of-pocket medical expenses in December 2007. The fourth column shows the monthly benefit net of average out-of-pocket medical expenses that would be needed in December 2007 to reflect growth in the non-medical component of the CPI-E. The last two columns show the percent difference between columns 3 and 4, expressed relative to both the actual 2007 benefit ("% Increase needed") and the 2007 benefit needed to keep up with inflation ("% Shortfall").

Table 2: Comparison of actual and needed net-of-medical-care benefit

Cohort, age in December 2007	Monthly benefits net of medical expenses			% Shortfall	% Increase needed
	At age 65	Dec. 2007, actual	Dec. 2007, needed		
All men, 79	$713.01	$924.74	$1017.04	9.1%	10.0%
All men, 89	588.63	866.80	1080.90	19.8%	24.7%
White men, 79	736.14	961.57	1050.04	8.4%	9.2%
White men, 89	542.75	898.97	1111.42	19.1%	23.6%
Black men, 79	598.75	763.91	854.06	10.6%	11.8%
Black men, 89	448.92	729.05	919.28	20.7%	26.1%
All women, 79	512.29	666.14	730.73	8.8%	9.7%
All women, 89	456.05	682.57	933.88	26.9%	36.8%
White women, 79	520.24	692.63	742.07	6.7%	7.1%
White women, 89	468.49	700.76	959.35	27.0%	36.9%
Black women, 79	511.09	626.16	729.02	14.1%	16.4%
Black women, 89	406.75	670.33	832.92	19.5%	24.3%

For example, men born in 1918 have seen their average Social Security benefit, net of out-of-pocket medical expenses, rise from $541.84 at the end of 1983 (at age 65) to $866.80 at the end of 2007 (at age 89). However, if this cohort's average benefit net of out-of-pocket medical expenses had kept pace with the non-medical CPI-E over that time period, this amount would have been $1080.90 in 2007. That is, the average benefit net of out-of-pocket medical expenses has declined by almost 20 percent relative to the non-medical CPI-E. Similarly, women born in 1918 have seen their average benefit net of out-of-pocket medical expenses decline by almost 27 percent relative to the non-medical CPI-E.

Table 3 shows the benefit net of average out-of-pocket medical expenses that retirees in both cohorts would be receiving in December 2007 if their benefits had been indexed to the CPI-E rather than the CPI-W. The last two columns, again, compare these amounts to the amounts that would be needed to reflect inflation in non-medical goods

prices. This table suggests that retirees would have been more protected from inflation if cost-of-living adjustments had been based on the CPI-E. However, there is still a shortfall of 10-20 percent for the older cohort and 6-7 percent for the younger cohort. The reason indexing to the CPI-E still does not fully compensate retirees for inflation is that, even if medical costs remained constant over time for the average elderly person, each individual elderly person would still be aging. As people age, they tend to need additional medical care, and the additional medical spending crowds out non-medical spending. Thus, Social Security benefits net of average out-of-pocket medical expenses would tend to decline for each individual even if the price of medical care rose at the same rate as the prices of other goods. This idea is illustrated graphically in Figures 3-8, in the contrast between the solid and dashed lines. A price index for medical care reflects the vertical shift over time in the solid line (the age profile of spending in any given year); it does not pick up the horizontal movement that occurs as an individual ages. In fact, each cohort is moving diagonally – to a higher curve as time passes, and to a point further to the right on that curve as its members age.

Table 3: Comparison of CPI-E indexed and needed net-of-medical-care benefit

Cohort, age in December 2007	Monthly benefits net of medical expenses		% Shortfall	% Increase needed
	Dec. 2007, with CPI-E	Dec. 2007 needed		
All men, 79	$950.56	$1,017.04	6.5%	7.0%
All men, 89	957.49	1,080.90	11.4%	12.9%
All women, 79	686.70	730.73	6.0%	6.4%
All women, 89	765.08	933.88	18.1%	22.1%

Because actual out-of-pocket medical expenditures are subject to a great deal of uncertainty, particular individuals may be more or less protected against inflation than

what is shown here. We emphasize again that we are not claiming retirees are worse off than they were when they were 65. Our analysis does not allow us to make any such utility comparisons. The CPI does not adequately account for the fact that higher medical costs may reflect the consumption of better quality medical care, and retirees may be better off even if they are left with less to spend on other non-medical goods. All we have shown is that Social Security benefits may not be fully inflation-indexed in the sense that recipients cannot, from one year to the next, purchase the same bundle of non-medical goods with their Social Security benefits.

IV. Conclusion

We have shown that Social Security benefits may not be as safe from inflation as commonly believed. Because medical costs have been rising over time, and because the elderly spend a larger fraction of their income on medical care than workers do, the CPI-W does not properly reflect the inflation experience of Social Security beneficiaries. This is partly reflected in the fact that premiums for Medicare Part B, in which most retirees participate, have risen much faster than Social Security benefits. It is compounded by the fact that retirees often have substantial out-of-pocket medical expenses, which increase as they age. Even experimental measures like the CPI-E may not fully compensate for inflation because they are intended to reflect the inflation experience of the average elderly person from year to year, rather than the experience of a given cohort.

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