HEALTH CARE COSTS, TAXES, AND THE RETIREMENT DECISION: CONCEPTUAL ISSUES AND ILLUSTRATIVE SIMULATIONS

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Abstract

Soaring health costs are squeezing government and household budgets. Rising public costs are also likely to boost future tax burdens. This study considers how rising tax burdens and out-of-pocket health care costs will affect the timing of retirement. Conceptually, the impact of taxes depends on which particular taxes are raised. How well people anticipate future increases in taxes and health care costs, and how they react at younger ages, will crucially affect retirement impacts. If households are farseeing rational planners, higher health costs and tax burdens will likely induce more saving and harder work while young, muting effects on retirement decisions.

To gauge the potential importance of rising taxes and health care costs to the retirement decision, the study compares projected retirement income for prototypical workers under two sets of assumptions about future tax and health care burdens. The results show that a moderate-income couple would have to work an additional 2.5 years under the scenario with high health care costs and tax burdens to receive as much income in the first year of retirement — net of taxes and out-of-pocket health spending — as they would receive under the low-cost scenario. The low-income couple would have to delay retirement under the high cost scenario by about 2.4 years to offset income lost from higher taxes and health costs, and the high-income couple would have to work an additional 2.8 years.

Introduction

Soaring health costs are imposing enormous pressures on public budgets. Those pressures will grow rapidly in the future absent radical reforms in health policy. At the Federal level, common projections imply that Medicare and Medicaid outlays alone will absorb an additional 4 to 7 percentage points of the GDP in 2030 than they do today (Congressional Budget Office 2005). At the state level, Medicaid is already putting a squeeze on other functions of government.

Government may be spending more and more, but not because it is reducing the burden on private individuals. Quite the contrary, private individuals also face large and growing health care costs. These can be particularly burdensome for older Americans. They face three types of out-of-pocket expenses. First, most pay Medicare premiums for optional Part B coverage, which pays for physician services and non-physician outpatient costs. The new Part D Medicare that provides coverage for prescription drugs also requires premium payments. Under current law, these premiums rise in step with Medicare outlays and are expected to absorb a growing share of Social Security benefits. Second, many older Americans also purchase private Medigap policies that cover Medicare deductibles and copayments while also covering catastrophic expenses. In addition, some make payments to past employers for retiree health insurance. Third, even those older Americans with extensive public and private insurance coverage must often make direct payments to health care providers for deductibles and copayments.

While private costs are rising rapidly, the comparable increase in public costs is likely to boost future tax burdens. Otherwise, budget deficits and the public debt will explode. It is likely that some of the increase in tax burdens will fall on older Americans, thus subjecting them to a

double whammy. They will face rapidly growing private health costs at the same time as tax increases are slowing after-tax income growth.

In an earlier article, Johnson and Penner (2004) spelled out the implications of the growing double burden. The projection of health costs was based on the intermediate assumptions of the Medicare trustees. The trustees assume that Part A and Part B costs per beneficiary grow at a real annual rate of 3.2 percent between 2000 and 2030. Per capita payments to providers and private insurance companies are assumed to grow at this rate, as are Part B premiums. The projections account for the new prescription drug program that will reduce out-of-pocket costs somewhat and reduce some Medigap premiums. The Part D premium is assumed to increase 4.5 percent per year in line with the trustees' assumptions. It is assumed that the growth in Medicaid enrollment is slowed by rising real incomes but accelerated by an increase in the participation rate as rising out-of-pocket costs strengthen enrollment incentives. The participation rate is assumed to rise from 75 percent to virtually 100 percent by 2030.

Tax policy is assumed to correspond to that in the "high revenue" path used in CBO's long-run budget projections. That path assumes that the Congress does nothing, President Bush's various tax cuts are allowed to expire, and real growth constantly pushes taxpayers into higher tax brackets. More and more taxpayers are also subjected to the Alternative Minimum Tax. A growing portion of Social Security benefits becomes taxable, because the thresholds over which benefits are taxed are not indexed for either inflation or wages. Under this scenario, the total Federal tax burden rises to 22.6 percent of GDP by 2030, about 23 percent higher than its 30-year average. But the entire increase is the result of a personal income tax increase of 60 percent over its 30-year average. It is alarming to note that this substantial tax increase is not

sufficient to make fiscal policy sustainable when combined with CBO's high outlay path.[1] The debt-GDP ratio would reach about 100 percent in 2030. It was 37.4 percent at the end of fiscal 2005.

Income projections are made for older couples and unmarried individuals using an Urban Institute model that forecasts future social, demographic, and economic characteristics of the population. The model projects that, on average, unmarried individuals will do somewhat better than couples through 2030 with the former enjoying a before-tax income increase of 50 percent while the latter receives a 38 percent increase.

These assumptions imply that tax burdens and out-of-pocket health expenditures soar for the median couple in which both partners are 65 or older. As a result, their real after-tax income net of health spending in 2030 is almost identical to their real income in 2000. The single individual does better and receives a real after-tax income increase net of health spending of 27 percent compared to the before-tax income increase of 38 percent.

Medicaid provides considerable protection for unmarried adults in the lowest quintile, and they enjoy a larger percentage increase by 2030 in after-tax income net of health spending than those in the top quintile. But poorer couples are not as lucky as singles. The median couple in the lowest quintile in 2030 has too much income to qualify for Medicaid and suffers an absolute drop in after-tax income net of health spending, as does the median couple in the second quintile. These estimates do not consider possible increases in state taxes because of budget pressures stemming from Medicaid.

The projections contained in our earlier article were not meant to be a forecast. Indeed, their main purpose was to show that current health policy cannot be sustained as long as 2030. It would take oppressive tax increases to sustain macro fiscal policy through that year, and when

[1] That path assumes that per capita health costs grow at 2.5 percent per year faster than GDP per capita.

the necessary tax increases are combined with very large increases in out-of-pocket health spending, political pressures behind reform are likely to become irresistible. The alternative of running very large budget deficits is unlikely to be tolerated by international and domestic financial markets.

However, there is no sign of significant reform as yet. It is probably safe to assume that public budget pressures and out-of-pocket health costs will continue to accumulate for a number of years into the future. Public budget pressures will not, in fact, become very serious until a few years after the first baby boomer qualifies for Medicare in 2011.

There are not many signs of public willingness to accept tax increases either. The first response to gathering budget pressures may be to let the deficit drift upward and to cut the growth of non-health public expenditures. But, as pressures mount, tax increases are sure to be discussed more and more and may well be implemented before serious reforms in health policy. The possibility that tax increases will come on top of rapidly rising out-of-pocket health costs raises many interesting questions, but one of the most interesting is, "What would that do to the timing of retirement?" This paper will explore the conceptual issues raised by that question and provide a simulation that computes an upper bound to the effects on the retirement decision.

Conceptual Issues

Out-of-pocket medical costs. Out-of-pocket medical costs are held down by very large subsidies from Medicare, Medicaid, and perhaps, employer plans for retirees. In some circumstances, tax subsidies may also hold down costs.

Out-of-pocket expenses have soared in the past and we project them to continue to grow faster than incomes in the future. In theory, out-of-pocket costs can rise because prices are rising

and the demand for the various medical services is inelastic, or because prices are falling and demand is highly elastic. In either case, increased spending on health would be expected to reduce the amount of resources spent on all other goods and services and leisure before retirement and probably delay full retirement or reduce the degree of partial retirement.

The price of health services may rise because the medical sector is becoming continually less efficient or because the individual is forced to pay a higher and higher share of total medical costs. Prices may fall because of technological improvements.

However, we believe that the most important driver of health costs is the continual flow of new goods and services on to the marketplace propelled by technological change. This allows the individual to buy valuable goods and services that were not available previously. For example, it is only recently that people were able to buy enhanced mobility with joint replacements, better eyesight through laser surgery, or lower cholesterol with statins.

Different medical goods and services will have different elasticities of demand and their prices may be falling or rising. In either case, one would expect people to spend more on medical goods and services as new products became available and thus to demand fewer non-health goods and less leisure time.

However, this conclusion is based more on an intuitive judgment than on a theoretical necessity. Just as new health-related goods are being invented, new non-health goods are also coming on to the market (iPods, GPS's, etc.) and people are continually finding new ways to use leisure time. Because of the rapidity of technological progress in the health care industry, we believe that the creation of new health-related goods by far dominates the creation of new non-health goods and the discovery of new ways to use leisure time, but that cannot be proved easily. Also, some of the new health products may be complementary to leisure and allow oldsters to

enjoy physical activities, such as golf and skiing, that might not otherwise be possible, thus making retirement look a lot more pleasant. We doubt that this is a quantitatively important force in determining the timing of the retirement decision, but it cannot be ruled out.

While we suspect that increases in the number of available products have been the most important cause of increased out-of-pocket costs in the past, the nature of the process may change significantly as we go forward. In particular, increasing budget pressures may cause the prices of various health-related goods to individuals to rise significantly because of reductions in the share of total costs that will be financed publicly. The prescription drug bill eventually introduces means testing into the level of Part B Medicare premiums (Moon 2006). President Bush's fiscal 2007 budget recommends eliminating the inflation indexing of the income thresholds at which means testing begins. Although large subsidies are likely to remain, even for the most affluent, some may choose to opt out of Part B and to purchase private insurance that provides fewer benefits.

Although more and more resources have been devoted to out-of-pocket expenses in the past, it is not impossible to think of people buying significantly less health-related goods as prices rise in the future. It is conceivable, though probably unlikely, that resources will eventually be diverted away from buying health-related goods and toward financing more leisure time.

The next stage of this research will focus more on the recent past and see if we can find any evidence of a causal relationship between the timing of retirement and the increase in out-of-pocket costs. It would be nice to have estimates of the prices of health-related goods and services, but that is difficult, because we think of them as being outcomes, such as enhanced mobility, that would appear in a utility function. For practical reasons, we shall probably have to

focus on inputs rather than outcomes and total out-of-pocket costs will have to be used as an independent variable.

Taxes. As noted earlier, our previous study allowed taxes to rise because the Congress did absolutely nothing. Thus, the Bush tax cuts expired and real bracket creep continually raised tax burdens. The expiration of the low rates on capital gains and dividends would be particularly hard on investment income. The growth in Social Security benefits would also be reduced by the rapid bracket creep affecting the amount of Social Security that is taxable, because the relevant thresholds in the law are not even price indexed. One would think that higher taxes on pension and other investment income and Social Security benefits should unambiguously reduce the demand for leisure, and thus, reduce progress toward partial or complete retirement. However, Gustman and Steinmeier (2000) have found that those who retire early have not necessarily saved more outside of pensions throughout their working life. This could be interpreted to imply that the amount of after-tax investment income does not affect the time of retirement, but we suspect that someone who has saved with the intent of retiring a certain year, whether relatively early or late, would be inclined to delay retirement when hit by tax increases. The Gustman-Steinmeier analysis suggests that the size of the initial Social Security payment does have an impact on the probability of retiring.[2] Therefore, taxes on Social Security should be important. Those taxes are trivial at the moment, but they are rising rapidly (Munnell et al. 2006).

The effect of the tax increases on investment income, pensions and Social Security benefits on the timing of total retirement or the degree of partial retirement will be muted to the

[2] Commentaries on the role of Social Security and pensions in retirement can be found in Gustman and Juster (1996) and Lumsdaine (1996).

extent that people forsee future tax increases. Then, a rational individual would be expected perhaps to work harder and save more at younger ages.

The expiration of the cuts in marginal tax rates and bracket creep will also reduce the reward for working, or in other words, reduce the cost of leisure time. Bracket creep is particularly powerful at the lower end of the income distribution as people move from negative to positive tax rates. Bracket creep is not significant to marginal incentives once one is in the top bracket. While taxes reduce the reward to work and so increase the incentive to partially or totally retire, they also reduce the amount of resources available to the individual and that effect would reduce the demand for leisure. These familiar substitution and income effects thus work against each other.

It is highly unlikely that the "do nothing" scenario will unfold in all its details. Besides, as already noted, the implied tax increases are not sufficient to make the budget outlook sustainable in CBO's high spending scenario, although a debt explosion is postponed. When tax increases are discussed as a means of financing rapid growth in Social Security, Medicare, and Medicaid, consumption taxes are mentioned more and more as a new source of revenue. In particular, value added taxes (VATs) have been discussed by Graetz (2006) and the Committee for Economic Development (2005). The president's panel on tax reform suggested, as one option, a revenue neutral reform that would tax consumption more heavily in a progressive manner while reducing the burden on investment income (President's Advisory Panel on Federal Tax Reform 2005).

Any move toward consumption taxation would be particularly burdensome on older individuals who are drawing down capital assets to finance consumption, perhaps by having annuitized their accumulated savings. If a new consumption tax finances some cut in the tax

burden on investment income as well, the elderly could face a double burden. Because after-tax discount rates will rise under these circumstances, there will be a fall in the market value of existing capital, thus eroding the value of retirement saving, including the present value of Social Security benefits. Such a fall in capital values would be expected to reduce the demand for leisure.

Examining only the tax-induced increase in the price of consumption, it has income effects that reduce the demand for leisure, but it also makes consumption of goods and services more expensive relative to leisure. Theoretically, the net effect could go either way, but we would conjecture that the demand for goods is elastic enough to imply that less resources are absorbed by consumption when the price rises, thereby leaving more resources to be spent on leisure at any age. This effect might hasten total or partial retirement at older ages, if it overcomes the impact of capital losses.

Summarizing the discussion of tax effects, increased tax burdens on Social Security, pension, and other investment income are likely to delay partial and complete retirement. The effects of wage, income, and consumption tax increases are theoretically ambiguous.

The Importance of Foresight. Economists like to think of households rationally planning their consumption of goods and leisure over time and adjusting their work and saving behavior accordingly. Such theories demand a lot of households. Among other things, they must forecast their health status and ability to earn into the distant future, the prices of a host of goods and services, and government tax and spending policies. Because they know that many of their forecasts are likely to go awry, they must deal with risk, complicating decisions about how to maximize welfare over the very long run.

In this paper, we focus on the effects of future changes in government policy. We have made some highly artificial assumptions about how policies may change in the future, but all that we really know is that current policy is not sustainable, because current policy will violate the government's long-run budget constraint by a wide margin. Indeed, it is on the edge of being violated currently. Consequently, taxes will have to be raised and/or spending will have to be cut dramatically. But who will lose benefits or bear higher tax burdens and when? How does the ordinary household cope with this risk or does it even know that it exists? In particular, are ordinary younger households preparing for large cuts in promised Social Security benefits, large increases in out-of-pocket health costs, and higher tax burdens, or will they be caught by surprise?

If households are farseeing rational planners, one would expect the prospect of higher health costs and tax burdens combined with lower Social Security benefits to induce more saving and perhaps harder work while young, thus muting effects on retirement decisions. Putting the matter another way, if households wait until the burden is upon them before they react, delaying retirement is likely to become a much larger part of the adjustment, since the only other real choice is to dramatically cut back on the consumption of other goods and services. They have waited too long to make much of the adjustment by increasing saving.

The problem of dealing with the government's budget constraint bedevils a great deal of recent policy analysis. It is really the elephant in the room, but we know little about the shape of the elephant. Different assumptions regarding future tax increases or spending cuts lead to very different results when considering problems like the growth effects of extending President Bush's tax cuts or the impact of radical tax reform, and in theoretical models, it should have

profound effects on retirement behavior as well.[3] And, of course, all this assumes that policy will change. If people think that is implausible, they must then worry about instability in financial markets and in the economy as markets become rattled by soaring budget deficits.

There are some hints that people are concerned about future government policy. In particular, polls suggest that many young people do not expect Social Security to last until they retire. There is not much evidence, however, that this is greatly affecting their saving or work effort.

Institutional incentives and restraints. The discussion so far has proceeded as though a household can fine-tune its consumption of leisure hours. In fact, people cannot always choose to gradually retire. The only available choice for many may be between full-time work and complete retirement.

The Age Discrimination in Employment Act may have forbidden compulsory retirement, but there are exceptions in partnership agreements and for some executives. Where there are not exceptions, workers may be given extremely generous offers to move them out of full-time employment, e.g. in academia. The structure of defined benefit plans often imposes a high tax on extended work by long-time employees and the early retirement age for Social Security produces a hoard of retirements at age 62 in the face of other variables that may push toward a later retirement.

Such discontinuities make it difficult to isolate the effect of something like rising out-of-pocket health costs on the retirement decision. Other incentives may swamp the effects of such costs at their current levels, but as the costs rise, they may suddenly become a much more important determinant of behavior.

[3] The importance of assumptions regarding forward-looking behavior and future policy changes can be found in Congressional Budget Office Publications for 2005-2006.

It should also be emphasized that there are vast differences in the tastes of individuals and in the types of institutional restraints facing different households. This can lead to a great diversity in behavior, thus adding to the difficulty of doing empirical analysis and forecasting results (Hanushek and Maritato, 1996).

Assessing Potential Impacts on Retirement

To gauge the potential importance of rising taxes and health care costs to the retirement decision, we compare projected retirement income for prototypical workers under two sets of assumptions about future tax and health care burdens. The high-cost scenario assumes that health care costs grow at the rapid rate projected by the Medicare trustees and that effective tax rates rise dramatically as Congress allows the recent tax cuts to expire and does nothing to restrain tax-bracket creep or the growth of the Alternative Minimum Tax and share of households whose Social Security benefits are subject to tax. The low-cost scenario assumes that tax burdens remain at their approximate 2000 levels and that health care costs remain constant in real terms between 2000 and 2030. We then estimate how much longer our representative adults would have to work under the high-burden scenario to receive as much income in the first year of retirement, net of taxes and out-of-pocket health care spending, as they would receive under the low-burden scenario. Of course, people would probably choose to sacrifice some consumption of other goods and services when taxes and health care costs rise, instead of foregoing only leisure, and if they are farseeing they would adjust saving and work effort during their working lives, so these estimates are necessarily upper limits on the impact. Examining the impact in 2030 also exaggerates the effect on the retirement decision, since it has already been argued that it is highly unlikely that the current system can last that long.

Defining Prototypical Retirees

We examine outcomes for six representative cases, consisting of low, moderate, and high earners for married couples and single adults. We assume that they were born in 1965 and thus reach age 65 in 2030. (Both spouses in the married couples are the same age.) The unmarried adult and the husband in the married couple earn 40 percent of the average national wage in the low-earnings case, 95 percent of the average national wage in the moderate-earnings case, and 150 percent of the average national wage in the high-earnings case. Wives are assumed to earn 40 percent of the average national wage under the low-earnings case and 70 percent of the average national wage under the moderate- and high-earnings cases. The average wage index comes from the 2006 assumptions of the Social Security trustees (Social Security Board of Trustees 2006). All of our representative earners work continuously from age 30 until they retire, when they completely withdraw from the labor force. We initially assume that all workers retire at age 65, two years earlier than the full retirement age, and we compute their average Social Security benefits accordingly.

We also assume that our moderate and high earners accumulate retirement savings in 401(k) plans. They convert their balances into lifetime annuities when they retire. We use *DYNASIM3*, the Urban Institute's dynamic microsimulation model, to estimate 401(k) balances and annual pension benefits, taking the average amount for retirees in *DYNASIM3* age 67 to 70 with the same approximate level of Social Security benefits.[4] We assume that they do not save

[4] *DYNASIM3* forecasts future demographic, social, and economic characteristics of the population by simulating births, deaths, marriages, divorces, work decisions, and earnings. The starting point for the model is the 1990-1993 panels of the Survey of Income and Program Participation, a nationally representative sample of the civilian noninstitutionalized population in the early 1990s. The model accounts for many of the forces transforming society that will shape future retirement outcomes over the next half century, including improvements in productivity, increases in women's employment and earnings, the growing racial and ethnic diversity of the older population, and changes in retirement behavior and private pensions. *DYNASIM3* uses the Social Security trustees' intermediate assumptions about future inflation, productivity growth, and interest rates.

outside of these plans, so their only source of retirement income derives from Social Security and employer pension plans.

Projecting Tax Burdens

The low-cost scenario assumes that tax burdens remain roughly at their 2000 levels. To estimate federal income taxes for 2030, we increase the personal exemption, standard deduction, exemption amounts for the Alternative Minimum Tax, and income thresholds that define the marginal tax rates and that determine the taxability of Social Security benefits. We assume they increase by the change in the average wage index. This scenario, then, eliminates tax increases deriving from tax-bracket creep, the spread of the Alternative Minimum Tax, and increases in the number of people forced to pay taxes on their Social Security benefits.

The high cost scenario assumes that effective tax rates soar as Congress does nothing to restrain their growth. If left unchecked, increasing numbers of taxpayers will be forced to pay the Alternative Minimum Tax, because the exemption amounts are fixed and do not increase with inflation or average wage growth. More Social Security beneficiaries will also see their benefits subject to tax. Under current law, only married couples with modified adjusted gross income and half of Social Security benefits in excess of $32,000 (and single adults with more than $25,000) pay taxes on their Social Security. These thresholds do not automatically increase over time. Tax cuts enacted in 2001, 2002, and 2003 will also expire unless Congress acts. The standard deductions, personal exemption, and income thresholds used to define marginal tax brackets will increase automatically over time with changes in the Consumer Price Index. However, because average wages and income will grow faster than prices, these increases will be insufficient to keep average tax burdens in check.

Projecting Health Care Costs

Estimates for out-of-pocket health care spending are based on *DYNASIM3* imputations from Johnson and Penner (2004). Under each scenario, we set health care costs for our prototypes equal to the average costs in *DYNASIM3* for respondents with similar levels of family income.

The first step in the imputation process is to estimate models of health care spending. We estimate a regression model of out-of-pocket payments to providers, a probit model of the probability of paying private insurance premiums out of pocket, and a regression of out-of-pocket private premium payments for those who make payments. Private premiums include payments made directly to insurance companies for Medigap coverage and to current or former employers to offset the cost of employer-sponsored health benefits. We estimate these models separately for married couples and single individuals. For married couples, the predictors in each model consist of the age of the husband, the age of the wife, and family income and its square. For single adults, the predictors consist of age, gender, and family income and its square. We allow the effect of age to differ before and after age 65. Models of payments to providers are based on data from the 2001 Medical Expenditure Panel Survey (MEPS), and models of premiums payments are based on data from the 2002 Health and Retirement Study (HRS).[5] We apply the coefficients from these models to aged families in *DYNASIM3* to estimate out-of-pocket payments to providers and private premium costs.

The next step is to assign Medicare premiums to aged families in *DYNASIM3*. Our model assumes that 94 percent of eligible adults participate in Medicare Part B, consistent with

[5] For more information about MEPS, see http://www.meps.ahrq.gov. For more information about HRS, see http://hrsonline.isr.umich.edu.

current participation rates. We select participants randomly from our sample of aged families. Premium payments were $45.50 per month in 2000, or $546 per year.

The model also predicts Medicaid coverage, which reduces out-of-pocket payments for low-income aged families by providing them with low-cost health benefits. We assume that all individuals ages 65 and older with incomes below the federal poverty level qualify for full Medicaid benefits, which pays their Part B premiums and all Medicare deductibles and co-payments, and covers services that are not included in the Medicare benefits package. Individuals in near poverty (with incomes between 100 percent and 120 percent of the poverty level) qualify for the Specified Low-Income Beneficiary Program (SLMB), which pays Part B premiums. Participation rates at older ages in Medicaid are relatively low, however. We assume that only three-quarters of older adults eligible for Medicaid or SLMB actually enroll, consistent with recent participation rates (Moon, Brennan, and Segal 1998). We randomly select participants, and set to zero their Part B out-of-pocket premiums and, if they qualify for full Medicaid benefits, their out-of-pocket payments to providers.[6]

We use different growth assumptions to project costs to 2030. Under the low-cost scenario, we assume that costs grow over time by the increase in prices. Under the high-cost scenario, we assume that costs grow at the intermediate rate assumed by the Medicare trustees (2004), which imply that real per beneficiary health costs will grow at an average annual rate of 3.2 percent between 2000 and 2030. We assume that per capita out-of-pocket payments to providers and private premiums grow at this rate. It roughly equals the actual growth rate in real per beneficiary Medicare costs from 1990 to 2003, when costs grew relatively slowly, but falls nearly 1 percentage point below the actual rate from 1980 to 2003. We combine our estimated

[6] The model does not account for Medicaid's medically needy provisions, which are available in some states. Under these provisions, categorically eligible individuals (including older adults) can receive benefits once their income net of out-of-pocket medical expenses falls below a specified threshold.

regression coefficients with the income and age values projected by DYNASIM3 to generate health care costs in future years.

This approach assumes that the share of total health care costs paid out of pocket by older families will remain constant over time. But the introduction of prescription drug benefits in Medicare in 2006 will likely shrink the out-of-pocket share of costs at older ages, by reducing out-of-pocket drug costs, payments for Medigap premiums, and possibly contributions for employer-sponsored retiree health benefits. We adjust our cost projections to account for the likely impact of Medicare Part D on out-of-pocket payments to providers and on private premium costs.

To estimate the impact of Medicare Part D on out-of-pocket payments to providers, we first predict participation rates. Following Congressional Budget Office (2004) projections, we estimate that only 87 percent of Medicare beneficiaries will choose Part D coverage. We select participants randomly from our sample.

We then estimate future out-of-pocket drug spending with and without Part D coverage. We subtract the difference from our initial estimate of total out-of-pocket payments to providers, which assumes that Medicare does not cover prescription drugs. Our initial estimate of out-of-pocket drug spending without Part D coverage is equal to the product of total out-of-pocket payments to providers and the share of out-of-pocket costs devoted to prescription drugs by aged families in the 2001 MEPS. But we increase the share over time because drug spending is projected by the Medicare trustees to increase at a faster rate than spending on other types of health services.

We estimate out-of-pocket drug spending under Medicare Part D by applying the program rules to projected total drug spending for each individual with coverage. We derive

total drug spending by multiplying total out-of-pocket spending by the ratio of total drug expenditures to total out-of-pocket spending in the 2001 MEPS, but we allow the ratio to grow over time with the relative increase in drug spending. Under the Part D program rules in place for 2006, Medicare drug coverage will be subject to a $250 deductible, a 25 percent copay until total drug costs reach $2,250, and then a 100 percent copay until total drug costs reach $5,100. Total drug expenditures above $5,100 will be subject to a 5 percent copay. These thresholds will increase with the percentage change in per capita drug spending.

Medicare Part D also includes special protections for low-income adults. Those with incomes below 135 percent of the federal poverty level will not face any deductible and will make only nominal copayments for their prescription drugs. For simplicity, we set their Part D out-of-pocket spending equal to zero. Those with incomes between 135 percent and 150 percent of the poverty level will face a $50 deductible in 2006, a 15 percent copay until total drug costs reach $5,100, and a 5 percent copay on total drug expenditures above $5,100.

The availability of prescription drug benefits through Medicare will likely reduce out-of-pocket premium payments for Medigap plans and employer-sponsored retiree health insurance coverage. We reduce out-of-pocket payments for private supplemental coverage – projected under the assumption that Medicare does not cover prescription drugs – by the value of the Part D benefit package. We set the value of the package equal to four times the annual Part D premium, because premiums are designed to cover only 25 percent of program costs. But employers also pick up a portion of supplemental insurance costs. About 65 percent of aged families with supplemental benefits had employer-sponsored coverage in the 2002 HRS, and according to Hewitt Associates only 40 percent of employer-sponsored retiree insurance premiums were paid by beneficiaries in 2006. On average, then, beneficiaries pay only 61

percent of supplemental insurance costs themselves. Thus we reduce premium payments by only 61 percent of the value of the Part D coverage.

We set the rate of increase in Part B and Part D premiums in our model equal to the increase in Part B and Part D per capita expenditures, respectively, because the premiums for both programs are designed to cover 25 percent of total program costs each year. In 2004, Part B premiums equal $66.60 per month, or $799 per year. The Medicare trustees' intermediate assumptions project real per capita increases in Part B expenditures of 3.2 percent (on average) from 2004 to 2009, 2.7 percent per year from 2010 to 2019, and 3.6 percent per year from 2020 to 2029. The Medicare trustees predict that Part D premiums will equal $35 per month (or $420 per year) in 2006, when full Medicare prescription drug benefits become available to all beneficiaries. The intermediate assumptions predict average annual increases in real per capita Part D expenditures of 4.8 percent from 2006 to 2009, 4.3 percent from 2010 to 2019, and 4.6 percent from 2020 to 2029.

However, both programs will relate premiums to income in coming years. Beginning in 2007, high-income Medicare beneficiaries will pay higher Part B premiums than other beneficiaries. The changes will be phased in over five years. When fully implemented in 2011, married couples with annual incomes above $400,000 (in 2007 dollars) and single adults with annual incomes above $200,000 will face Part B premiums that are 220 percent higher than those paid by married couples with incomes below $160,000 and single adults with annual incomes below $80,000. In addition, those with incomes below 135 percent of the federal poverty threshold will not face any Part D premiums, and premiums will gradually phase in as income rises to 150 percent of the poverty threshold.[7]

[7] As noted earlier, the Medicare Savings Program will cover Part B premiums for low-income beneficiaries.

Results

Table 1 reports income (in 2005 constant dollars) in the first year of retirement for our prototypical married couples who retire at age 65 in 2030. The low-earning couple receives about $19,300 in annual Social Security benefits, their sole source of income. The couple with moderate lifetime earnings receives $29,600 in Social Security benefits, plus another $15,200 in a private annuity, for total annual income of about $44,800. The high-earning couple receives total annual income of about $64,000, split almost evenly between Social Security and private annuity income.

Under the low-cost scenario, neither the low-income couple nor the moderate-income couple pay any federal income taxes. The high income couple faces an average federal income tax rate of about 2.2 percent, paying about $1,400 in taxes. Out-of-pocket health care costs amount to about $2,300 for the low-income couple, $6,100 for the moderate-income couple, and $6,300 for the high-income couple. The share of after-tax income going to health care is about 12 percent for the low-income couple, about 14 percent for the moderate-income couple, and 10 percent for the high-income couple.

Taxes and health care costs are much higher under the high-cost scenario. The low-income couple continues to pay no federal taxes, but now the moderate-income couple pays about $850 in taxes and the high-income couple pays about $9,100. Both couples, in fact, pay the Alternative Minimum Tax. Compared to the low-cost scenario, low-income couples pay about $6,500 more in health care costs under the high-cost scenario, moderate-income couples pay about $8,600 more, and high-income couples pay about $8,800 more. Relative to the low-cost scenario, the high-cost scenario reduces income net of federal income taxes and health care costs

by about $6,500 for the low-income couple, $9,400 for the moderate-income couple, and $16,600 for the high-income couple.

If workers approached retirement under the assumption that they would face the low-cost scenario, with low taxes and out-of-pocket health care costs, and instead were confronted by the high-cost scenario, they could restore their retirement income by delaying retirement and working longer. Working longer would raise Social Security benefits, by reducing the actuarial reduction that hits workers born after 1959 who retire before age 67. Benefits for our prototypical couples are reduced by 13.33 percent when they retire at age 65 instead of at age 67, the full retirement age. Benefits increase by 8 percent for each year that workers delay Social Security take-up beyond age 67 (up to age 70). Pension plan balances will continue to grow for covered workers who delay retirement, and those balances will be spread over fewer numbers of years. In addition, we assume that workers with 401(k) plans will continue making contributions to their plans as long as they remain employed. We assume that contributions equal 6 percent of earnings, the average contribution rate for contributing employees in 2001 (Smith, Johnson, and Mueller 2004), and that plan contributions grow at a nominal rate of 4 percent per year.

Our moderate-income couple could receive as much annual retirement income under the high-cost scenario as under the low-cost scenario if they delayed retirement by about 2.5 years. About two-thirds of the additional income comes from enhanced Social Security benefits, and one-third from the larger private annuity. Our low-income couple would have to work an additional 2.4 years to offset income lost from higher taxes and health care costs, and our high-income couple would have to work an additional 2.8 years.

Table 2 shows results for prototypical single adults. The findings are qualitatively similar to those for married couples, except that low-income single adults are not affected much by the

high-cost scenario. Like low-income married couples, they would not pay federal income taxes under either scenario. And they would not be affected much by rising health care costs, because most of their costs are covered by Medicaid. (Our low-earning married couple receives too much income for Medicaid protection.) As a result, the low-income single adult would only have to work about six more months under the high-cost scenario than the low-cost scenario. The moderate-income single adult would have to work an additional 2.0 years, and the high-income single adult would need to work an additional 2.6 years.

Our findings our similar to Munnell et al. (2006), although we explore different questions. Munnell et al., find that workers in 2030 with substantial 401(k) assets would have to delay their retirement by about 2.3 years to achieve the same replacement rate as workers in 2002, accounting for increases in Social Security's normal retirement age, Medicare Part B premiums, and the share of benefits subject to taxation. We find that workers would have to delay retirement by about 2.5 years (in general) to achieve the same absolute level of retirement income if total out-of-pocket health care costs and total federal income tax liabilities grow especially rapidly. Our estimates hold Social Security rules constant. Munnell et al., attribute more than half of the increase in the retirement age to changing Social Security provisions.

Discussion

Although our estimates are admittedly crude, they suggest that rising taxes and health care costs will not lead to dramatic increases in future retirement ages. If taxes and out-of-pocket health care expenses rise much more quickly than expected, we estimate that most workers will have to delay retirement by more than two years — a substantial increase — to maintain their retirement incomes. However, our estimates overstate the likely response. Most workers would

likely respond to this shock by making do with less retirement income, reducing consumption of goods and services as well as leisure, instead of simply working longer to make up the entire difference. Moreover, because people are likely to experience some tax and medical cost increases before they retire, they will not be totally surprised by the size of these burdens after retirement. Consequently, they will probably elect to save more, thus reducing the need to delay retirement.

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Table 1. Income In First Year of Retirement for Prototypical Married Couples Who Retire At Age 65 in 2030, Under Alternative Assumptions About Federal Tax Rates and Out-of-Pocket Health Care Costs ($2005)

	Low Income			Moderate Income			High Income		
	Low Cost	High Cost	Difference	Low Cost	High Cost	Difference	Low Cost	High Cost	Difference
Income									
Social Security	19,257	19,257	0	29,600	29,600	0	32,173	32,173	0
Annuity from 401(k)	0	0	0	15,170	15,170	0	31,807	31,807	0
Total	19,257	19,257	0	44,770	44,770	0	63,980	63,980	0
Federal Income Taxes	0	0	0	0	847	847	1,383	9,134	7,751
After-Tax Income	19,257	19,257	0	44,770	43,923	-847	62,597	54,846	-7,751
Average Tax Rate	0.00%	0.00%	0.00%	0.00%	1.89%	1.89%	2.16%	14.28%	12.12%
Out-of-Pocket Health Care Costs	2,307	8,808	6,501	6,105	14,680	8,575	6,336	15,170	8,834
Net Income	16,949	10,449	-6,501	38,665	29,242	-9,422	56,261	39,676	-16,585
Retirement Age That Equalizes Net Income	65.0	67.4	2.4	65.0	67.5	2.5	65.0	67.8	2.8

***Source*:** Authors' estimates.

Table 2. Income In First Year of Retirement for Prototypical Single Adults Who Retire At Age 65 in 2030, Under Alternative Assumptions About Federal Tax Rates and Out-of-Pocket Health Care Costs ($2005)

	Low Income			Moderate Income			High Income		
	Low Cost	High Cost	Difference	Low Cost	High Cost	Difference	Low Cost	High Cost	Difference
Income									
Social Security	9,628	9,628	0	16,321	16,321	0	22,365	22,365	0
Annuity from 401(k)	0	0	0	15,170	15,170	0	31,807	31,807	0
Total	9,628	9,628	0	31,491	31,491	0	54,173	54,173	0
Federal Income Taxes	0	0	0	356	2,302	1,946	3,160	8,778	5,617
After-Tax Income	9,628	9,628	0	31,135	29,189	-1,946	51,012	45,395	-5,617
Average Tax Rate	0.00%	0.00%	0.00%	1.13%	7.31%	6.18%	5.83%	16.20%	10.37%
Out-of-Pocket Health Care Costs	245	734	489	3,110	6,361	3,251	3,168	7,340	4,172
Net Income	9,384	8,894	-489	28,025	22,828	-5,197	47,845	38,055	-9,789
Retirement Age That Equalizes Net Income	65.0	65.5	0.5	65.0	67.0	2.0	65.0	67.6	2.6

***Source*:** Authors' estimates.

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