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**Social Security and Medicare Spending Growth:
Is It Just More Seniors or More Per Senior?**

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Abstract

Long-term federal budget forecasts show sizable increases in federal spending in the coming decades. This is concerning to those who worry that the growth of government will diminish incentives, reduce productivity, and limit economic growth. A large share of the forecasted increase in spending is due to Social Security and Medicare. This paper considers how much of this increase is simply due to the growth in the eligible population and how much is due to growth in spending per beneficiary. The findings show both the former and the latter account for sizable shares of the growth. Thus, there is room to limit benefits without cutting them. Simulations show that capping real benefits per senior at their 2017 levels would have very sizable effects on limiting spending. In limiting benefits, it is important to avoid price controls and mandated coverage limits that cause shortages, non-price rationing, and political infighting over the programs.

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I. Introduction

Most long-term projections indicate a large increase in the size of the federal government. For example, the Congressional Budget Office (2018) projects that federal spending as a share of GDP will rise from 20.6% in 2018 to 26.9% by 2040. This is greatly concerning to many people who worry that the increased role of government in the economy – and the consequent reduction of the private sector – inevitably comes with diminished work and investment incentives, reduced productivity, limited economic growth, and lessened opportunities for individuals to improve their lives.

Over half of this projected increase in federal spending is due to increased spending on Social Security and Medicare.¹ Thus, any discussion of limiting federal spending should address these two programs. This paper examines two aspects of the projected increase in Social Security and Medicare. One aspect is purely demographic. The baby boom generation has begun to retire and will do so in increasing numbers over the next two decades. This alone drives up spending. The other aspect is the generosity of the benefits paid by the two programs. If these are increasing as well, this adds to the growth in spending.

These two components have different implications regarding how spending can be limited. If all of the increase is due to growth in the senior population, limitations in spending are more difficult since it requires reducing benefits. However, if a good deal is due to benefit increases, limiting spending can be done by slowing the growth or capping benefits at current levels. As described below, the spending growth in these programs is due to both sources, so there is room for limiting this growth without actual cuts in benefits. Indeed, we find that capping real spending per beneficiary of Social Security and Medicare at their 2017 level has

¹ Much of the rest of the projected increase is from higher interest payments on the debt.

substantial effects on the expected path of future spending. Instead of rising to about 12% of GDP, it would rise to about 9% and fall thereafter to a share no larger than today's. However, the methods used to limit spending growth are important. Use of price controls on services and mandating limits on types of coverage generate shortages, non-price rationing, and political infighting over what is covered and who is served. These methods to limit spending growth are highly undesirable.

The rest of the paper is organized as follows. Section II gives more background and details on expected spending growth of these programs and on the magnitude of the issue. Section III describes how spending and spending growth on Social Security and Medicare can be broken into components. These components are the number of seniors – the primary beneficiaries of the spending – as a share of the population, spending per senior, and GDP per capita. Spending per senior is denoted as absolute generosity and spending per senior relative to GDP per capita is denoted as relative generosity. The latter indicates benefits per senior relative to per capita national income.

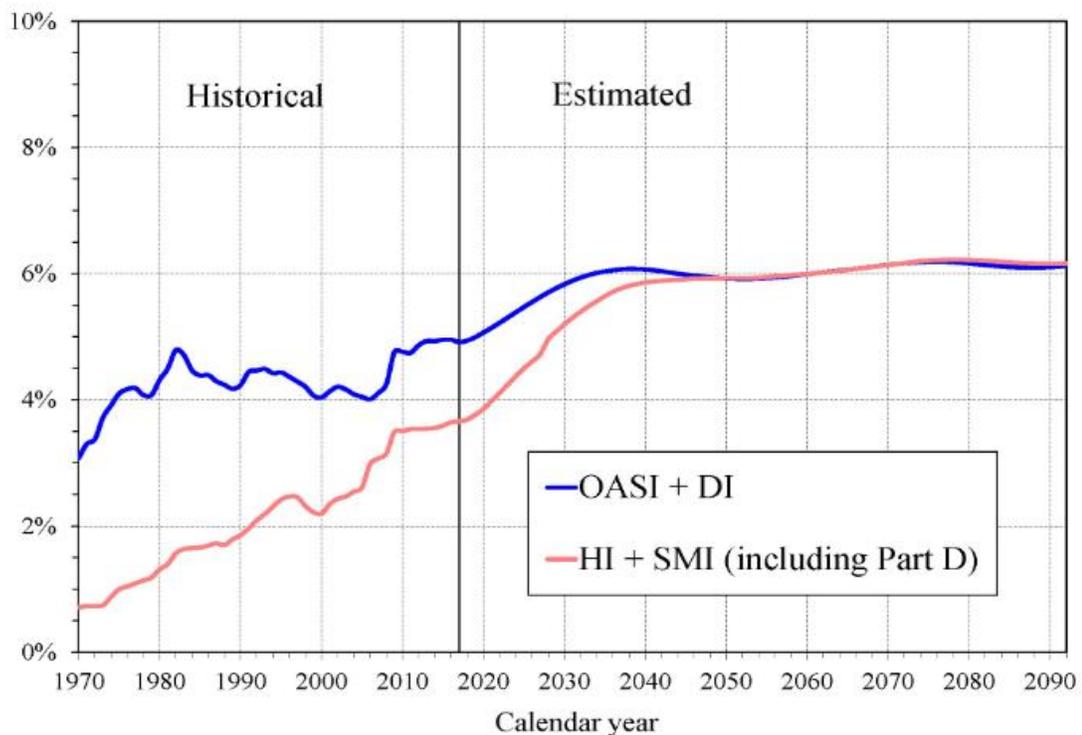
Section IV presents the data on the forecasted time path of these components. Seniors' share of the population will grow by about one-third by 2040. Additionally, real Social Security and Medicare benefits per senior are forecast to grow as well. However, real GDP per capita is expected to grow a little faster than real Social Security benefits per senior, but slower than real per senior Medicare benefits. Section V shows the results of exercises that simulate capping real Social Security and Medicare benefits per senior. Growth in simulated spending still rises for a while because of the growth in the senior population – but by much less than current projections – and spending as a share of GDP eventually declines. Section VI discusses issues regarding

limiting spending on these programs, as well as the pitfalls noted above of price controls and mandated limits on coverage. Lastly section VII concludes.

II. Background

Figure 1 shows past and forecasted spending on Social Security and Medicare, as percentages of GDP, from 1970 to 2090. This illustrates the issue we address.² As seen from the figure, Social Security spending, though it rose and fell somewhat erratically until the mid-2000s, has risen substantially over the past ten years and is forecasted to continue to do so until about 2040. Medicare spending has been on a sharp, upward trajectory since its inception and this trajectory is predicted to continue to 2040.

Figure 1
 Projected Social Security (OASI+DI) and Medicare (HI+SMI) Spending as a Share of GDP
Chart A—Social Security and Medicare Cost as a Percentage of GDP



Source: Social Security Administration (2018), <https://www.ssa.gov/OACT/TRSUM/index.html>.

² This figure is taken from the summary of the Social Security and Medicare Boards of Trustees 2018 annual reports. See Social Security Administration (2018a).

From fiscal year 2017 to 2040, the total of Social Security and Medicare spending is expected to rise by roughly 3.5% of GDP – from about 8.5% to around 12%. In raw terms, nominal GDP is predicted to increase by 173% between 2017 and 2040. Over the same time period, the forecasted growth in nominal Social Security spending is 237% and for Medicare it is 338%.³

The increase in spending of 3.5% of GDP for these two programs is quite large. Table 1 helps put this in perspective. This table displays several other categories of federal spending as shares of GDP for fiscal year 2017.⁴ During that year, federal spending on national defense was 3.1% of GDP. Spending on non-defense discretionary programs was 3.2% of GDP. The increases in Social Security and Medicare just noted are the spending equivalent of adding another Department of Defense or doubling non-discretionary defense expenditures, plus more. Moreover, as can be seen from Table 1, the other major categories of spending fall well short of the 3.5% increase of Social Security and Medicare.

Table 1
Some Federal Spending Categories as a Share of GDP, Fiscal 2017

Total	Defense	Non-Defense Discretionary	Medicaid	Other Means Tested	Other Mandatory	Net Interest
20.8	3.1	3.2	2.0	1.7	2.0	1.4

Source: <https://www.whitehouse.gov/omb/historical-tables/>

The magnitude of the issue is clear. Before addressing what might be done, we turn to some diagnosis of sources of the problem. In particular, we consider how much of the predicted increase in Social Security and Medicare spending is simply due to the aging of the population and how much is due to the generosity of the programs.

³ See Social Security Administration (2018b) and The Board of Trustees (2018).

⁴ From Office and Management and Budget (2018).

III. Components of Spending Growth

It is straightforward to break down the changes in Social Security and Medicare spending as a share of GDP into various component parts. These parts are the growth in the senior citizen population share, the growth in spending per senior, and the growth in GDP. Equation (1) does so formally for Social Security.

$$(1) \quad SS/GDP = [(pop\ 65+)/(\text{total pop})] * [(SS/pop\ 65+)/[(GDP/(\text{total pop})]],$$

where SS = Social Security spending, pop 65+ = the population of people 65 and older, and total pop = total national population.

The first term in square brackets is the share of the nation's population that is 65 and older, i.e., "seniors." The next term in square brackets is Social Security spending per senior. The final square-bracketed term is GDP per capita. The generosity of Social Security can be thought of two ways. One is the second term: Social Security spending per senior. This translates approximately to Social Security benefits per beneficiary, though not exactly.⁵ A second measure of the generosity is spending per beneficiary relative to GDP per capita. This measures per senior benefits relative to per person national income. This is the second and third terms combined. Denote the first measure as absolute generosity and the second measure as relative generosity.

Changes in SS/GDP can be written as:

$$(2) \quad \% \Delta(SS/GDP) = \% \Delta(\text{senior pop. share}) + \% \Delta(\text{benefits per senior}) - \% \Delta(\text{GDP per capita}),$$

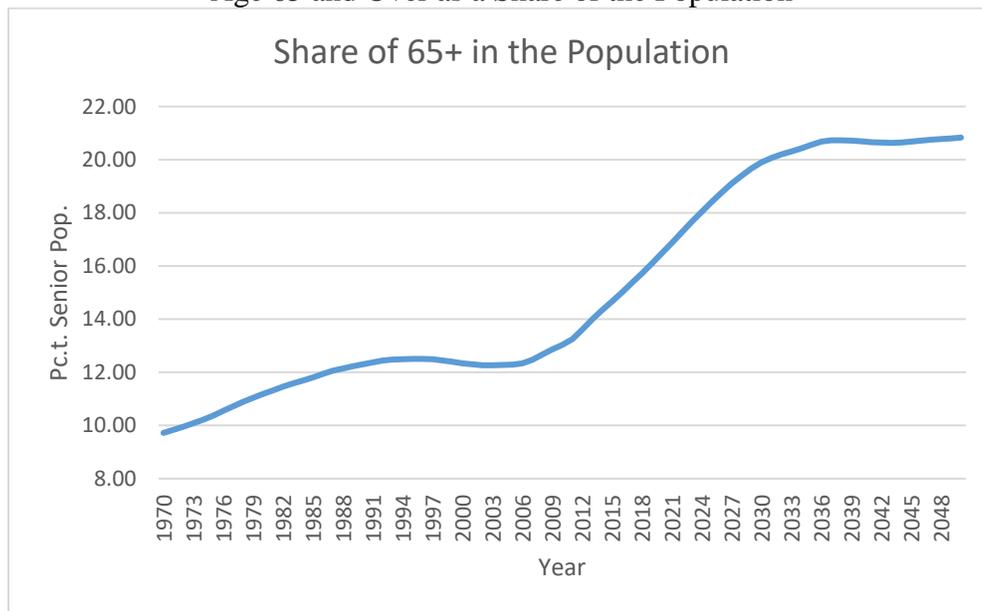
⁵ This is not exact for several reasons. The normal eligibility age for Social Security is now 66 and not everyone eligible retires. There are some recipients under 65, e.g., surviving spouses and children and disability insurance recipients. There are administrative costs as well. However, spending on these other individuals is small relative to regular benefits. Thus, Social Security spending per senior is a reasonably accurate indicator of benefits per recipient.

where $\% \Delta$ denotes percent change. Thus, the percent change in Social Security spending as a share of GDP is the percent change in the senior share of the population plus the percent change in absolute generosity less the percent change in GDP per capita. Alternatively, the percent change in SS/GDP can be broken down into just two components: the percent change in the senior share of the population plus the percent change in relative generosity. This is because the change in relative generosity is the final two terms of (2). The breakdown of Medicare spending and its growth is done in an analogous way.

IV. More Seniors or More Per Senior?

It is clear from equation (2) above that the forecasted changes in spending as a share of GDP may arise simply because of the aging of the baby boom generation, resulting in an increasing number of people aged 65 and over. Figure 2 illustrates the past and forecasted share of the U.S. population aged 65 and over.⁶ From the middle 1980s to the mid-2000s, this share

Figure 2
Age 65 and Over as a Share of the Population



Source: Social Security Administration (2018x), https://www.ssa.gov/OACT/TR/2018/lr_5a3.html

⁶ From Social Security Administration (2018c). Their intermediate forecast is used.

was fairly stable at just over 12%. It then began to grow and by 2017 it was over 15%. It is expected to continue to grow and then stabilize at just under 21% by the late 2030s. Thus, a great deal of growth in the 65 and over population is yet to come. Accordingly, at least some part of the growth in Social Security and Medicare comes from the simple demographic fact of the aging baby boom.

Now consider the relative generosity of Social Security and Medicare, that is, the benefit per senior relative to GDP per capita. We compute real Social Security spending per senior and real Medicare spending per senior and then each is divided by real GDP per capita.⁷ We use the GDP price deflator in the computations.⁸ For values beyond 2017, the Social Security Administration's spending, GDP, and price deflator intermediate forecasts are used in the computations. Figure 3 depicts the findings. Social Security benefits are the dashed blue line and Medicare is in solid red.

The relative generosity of Social Security benefits were high and rising in the 1970s and much of the 1980s, then settled into a fairly stable value of just over 30% of GDP per capita. There was a rise after the Great Recession, but this was largely due to slow growth in GDP per capita during this time. Forecasts are for it to fall somewhat from the 2017 value of 32% and stabilize at around 29% of GDP per capita.⁹ Thus, it is clear that relative generosity of Social Security is falling slightly. However, as seen below, absolute generosity is forecast to rise.

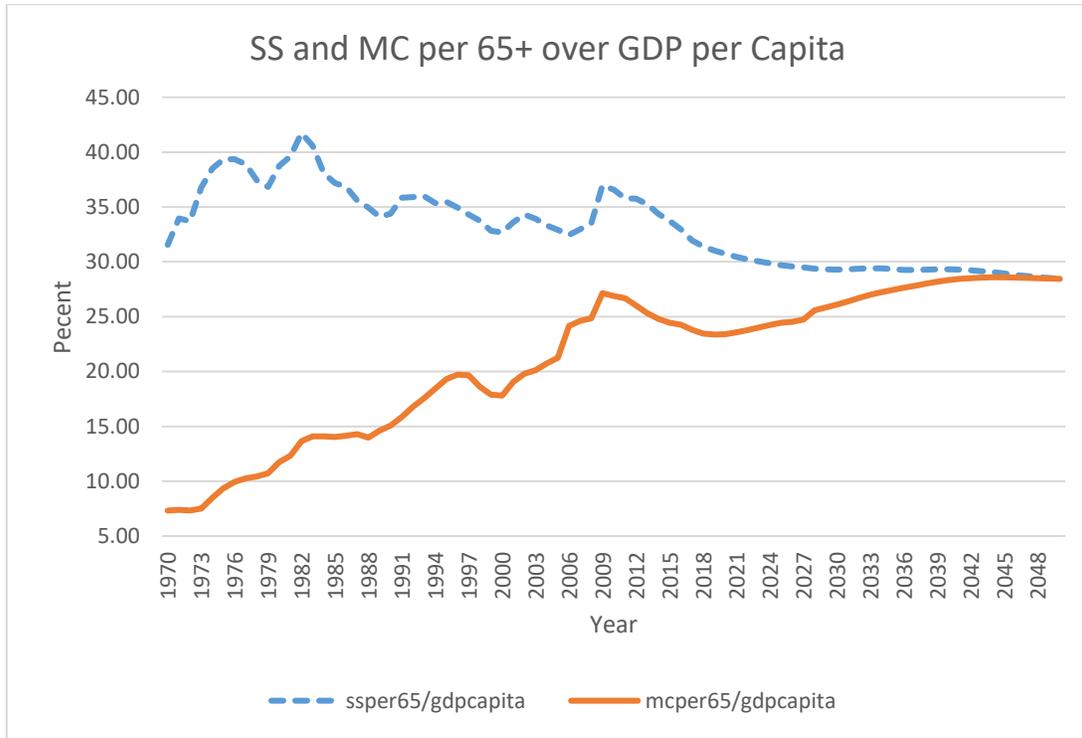
⁷ For Medicaid spending, data from The Board of Trustees (2018) are used. Medicare spending data does not deduct premiums paid by recipients.

⁸ Medical price inflation historically has been substantially higher than overall inflation. However, in the past eight years, they have been quite comparable. Thus, increases in real Medicare benefits per senior prior to recent years will be understated. For future years, we rely on The Board of Trustees (2018) forecast.

⁹ The stability of relative generosity makes sense, absent major changes in Social Security benefit rules. Benefits are a fraction of real lifetime earnings, which corresponds closely to GDP per capita.

Figure 3

Relative Generosity: Social Security (SS) per Senior and Medicare (MC) per Senior as a Percent of GDP per Capita



The situation regarding Medicare is different. From 1970, the program’s relative generosity rose substantially from 7.33% of per capita GDP to about 24% just before the Great Recession. In the years following the Great Recession, these values were elevated, but this was due to slow GDP growth. In 2017, relative generosity had returned to its pre-recession level of about 24%. It is predicted to rise to 28.32% by 2040 and stabilize at that level. Thus, increased relative generosity matters a good deal in the expected growth of Medicare spending as a share of GDP.

Regarding absolute generosity, forecasts indicate large increases for both. Table 2 displays a summary. This table shows real spending per senior in 2017 and for 2040. Though Social Security relative generosity is expected to fall slightly before stabilizing, absolute

generosity is expected to increase. As shown in the first row of Table 2, real spending per senior will rise from \$18,715 in 2017 to \$24,257; an increase of nearly 30%. The second row shows that real Medicare absolute generosity is expected to rise from \$13,940 per senior to \$23,443; a 68% increase. Real GDP per capita, shown in the third row, is predicted to rise faster than Social Security spending per senior but slower than that for Medicare. This is consistent with the above discussion regarding relative generosity of the programs.

Table 2
 Absolute Generosity: Real Social Security Spending per Senior and
 Real Medicare Spending per Senior, 2017 and 2040

	2017	2040	Percent Change
Real Social Security Spending per Senior	\$18,715	\$24,267	29.66%
Real Medicare Spending per Senior	\$13,940	\$23,443	68.18%
Real GDP per capita	\$58,544	84,094	41.39%
Senior (65+) Population Share	15.36	20.69	34.7%

Sources: Social Security Administration (2018d) and The Board of Trustees (2018).

Row 4 of Table 2 adds the values for share of seniors in the population to illustrate each of the components of spending changes. This is expected to rise by 35%. Our conclusions from the above as follows. Naturally, spending on both Social Security and Medicare are driven to some extent by the growth of the population over 65. Regarding Social Security, higher levels of future spending also are driven by increasing spending per senior. Though spending per senior is growing, it is growing somewhat slower than the growth of GDP per capita for Social Security. The latter reduces its share of GDP. For Medicare, spending per senior is expected to rise and to rise faster than GDP per capita, thus adding to its rise as a share of GDP.

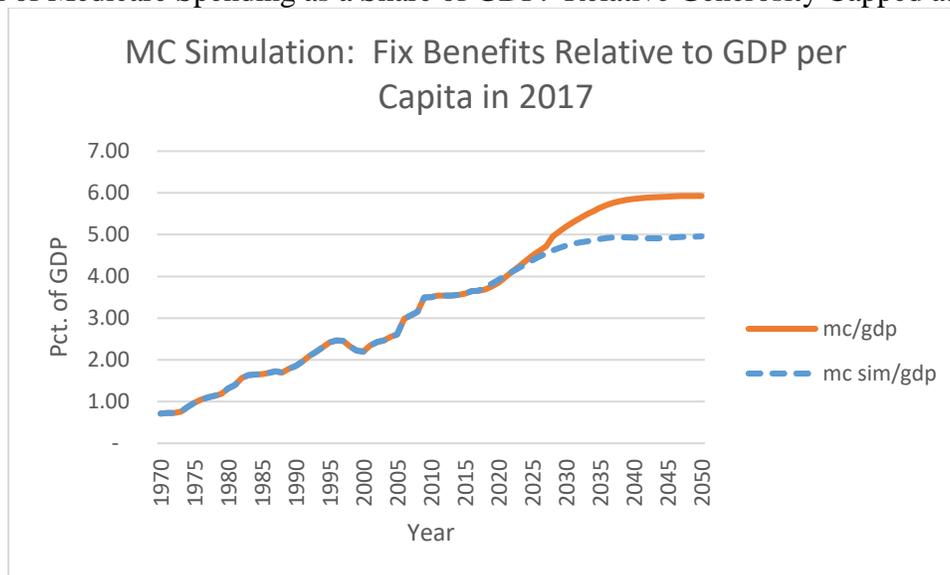
V. Simulations: What Happens with Caps on Relative and Absolute Generosity?

This section considers two exercises related to limiting spending on Social Security and Medicare. In particular, we simulate the outcome of capping the relative and absolute generosity of the programs at their 2017 levels. Note that this does not involve spending cuts to the beneficiary population. Capping relative generosity implies that per senior spending relative to GDP per capita remains the same. In fact, this entails increases in spending per senior as it will grow at the same pace as GDP per capita. Capping absolute generosity implies no cuts below (or increases above) the 2017 levels of real spending per senior.

First consider capping relative generosity. For Social Security, this does not have much effect. The reason is that relative generosity falls slightly from now into the future. Thus, spending as a share of GDP would rise slightly under this scenario. For this reason, we do not simulate Social Security in this regard.

Figure 4 shows the simulation for Medicare where spending per senior is fixed at 23.81% of GDP per capita; its 2017 value. The solid red line in Figure 4 shows the forecasted values of

Figure 4
Simulation of Medicare Spending as a Share of GDP: Relative Generosity Capped at 2017 Level



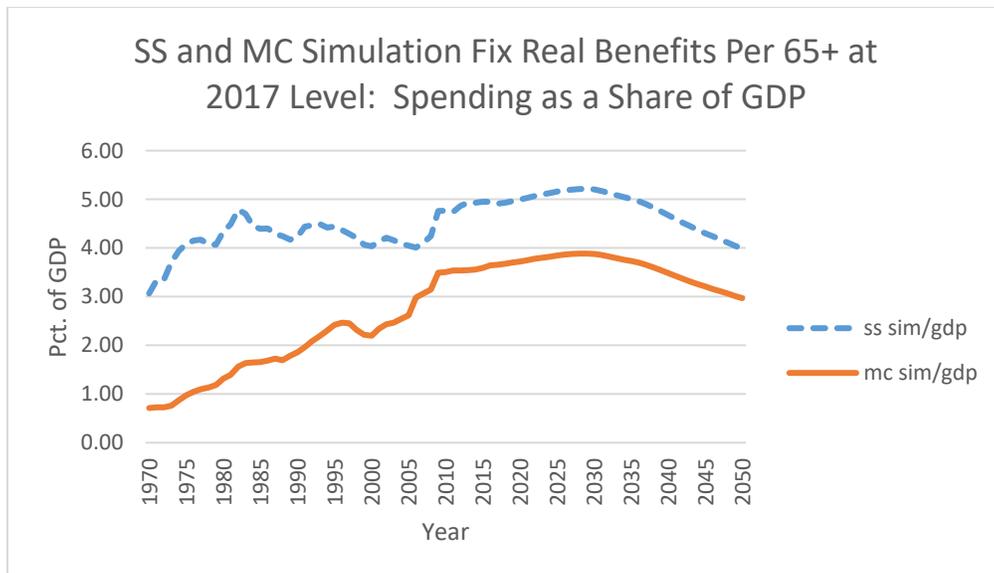
Note: MC denotes Medicare

Medicare spending as a share of GDP and the dashed blue line are the simulated shares. Simulated values begin to diverge from the forecast in a few years. These values stabilize at around 4.9% of GDP. This is about one percentage point below the forecast values.

Figure 5 shows the simulations for Social Security and Medicare where spending per senior are capped, in real terms, at their 2017 levels. For Social Security, this is \$18,715 per senior and for Medicare it is \$13,940 per senior. As in Figure 4, the simulations show the resulting spending as shares of GDP.

In this scenario, substantial effects emerge. Simulated Social Security spending peaks at just over 5% of GDP and then falls below 5%. This is in contrast to the Social Security Administration forecast of spending rising to and stabilizing at 6% of GDP. Regarding Medicare, simulated spending grows but peaks at 3.9% of GDP, then begins to fall. The forecast has Medicare spending growing to almost 6% of GDP and remaining there.

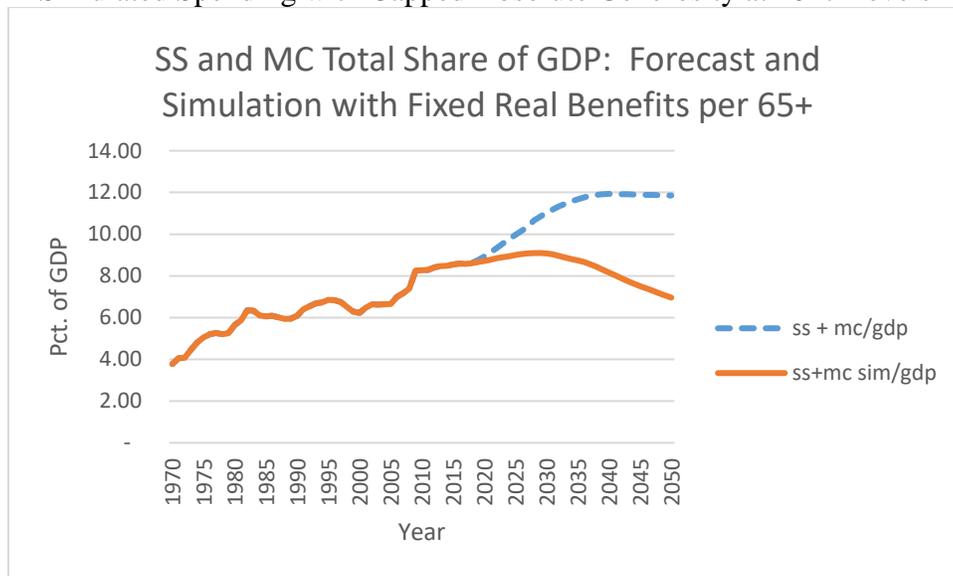
Figure 5
Simulation of Social Security and Medicare Spending as Shares of GDP: Absolute Generosity Capped at 2017 Levels



Note: SS denotes Social Security and MC denotes Medicare.

Figure 6 illustrates the total effect of simulated spending relative to forecasted spending. The total of Social Security and Medicare spending, as a share of GDP, is plotted. The dashed blue line shows the forecast and the solid red line are the simulated values with capped real absolute generosity. The differences are rather striking. The forecast is for spending to rise fairly rapidly above the current 8.5% to nearly 12% of GDP, then stabilize there. For the simulation, spending rises somewhat to over 9% of GDP, then begins to steadily decline. By 2040, the simulated value is 8.2%. This is lower than current spending and well below the 2040 forecast spending of 11.9%.

Figure 6
Forecast and Simulated Total Spending, Social Security and Medicare, as a Share of GDP:
Simulated Spending with Capped Absolute Generosity at 2017 Levels



VI. Comments on Implementation

Implementing any major program of spending limitations is always difficult, particularly with strong interest groups involved. This is certainly the case with Social Security and Medicare. This paper does not offer specifics in this respect. Rather, comments are offered regarding some of the issues that have been raised regarding Social Security and Medicare

spending and pitfalls to be avoided. Regarding the latter, it is suggested it is particularly important to avoid, as much as possible, political determination of specific program benefits and non-price rationing. Each of these leads to a great deal of conflict and discord.

With respect to Social Security, a number of ideas have been put forth to limit Social Security spending. One is raising the retirement age. A gradual increase in the age of full retirement to 67 is already in place. Obviously, this reduces somewhat the share of the elderly population that receive funds. We do not consider this further since it would likely have the most effect for those younger than the baby boom generation and it is the baby boom that causes much of the spending surge.

Another idea for limiting Social Security spending is to change the benefit formula to make it even less favorable to high income individuals. This is implicit means testing of benefits and moves Social Security more toward a safety net program. The benefit limitations to high income individuals naturally reduce the generosity for that group. If they are substantial enough limitations, then average generosity might be capped. In effect, spending per senior may be capped, but the distribution of funding changes among recipients.

Turning the Medicare, we have not considered raising the age of eligibility. One reason for this is that it makes early retirement infeasible. Early retirement is straightforward with respect to Social Security. People can support themselves with their own retirement funds until they reach Social Security eligibility age. For health insurance, there are scant insurance options, aside from Medicare, once one retires and exits employer coverage. Thus, raising Medicare's age of eligibility would force many to retire later than desired.

With respect to limiting Medicare spending growth, there are important pitfalls to avoid. One is limiting payments to providers. Payments to providers should be at market determined

rates. Any attempt to pay less than this causes shortages of the supply of medical services and non-price rationing. Both are to be avoided. Naturally, shortages are frustrating for program recipients and also leads to non-price rationing. Since there is not enough supply to satisfy demand, the short supply is allocated on a non-price basis. This often means those who have the best connections or political influence are the ones who obtain the service. This is not a desirable way to allocate goods. Competition for the good becomes a political contest of who can gain the most influence.

Another undesirable way to limit spending growth is to cap the availability of various services and procedures. Related to this is coupling it with guidelines regarding who qualifies for the limited number of procedures. This, as well, creates non-price rationing and invites political influence. Those with political clout will have the loudest voices regarding what services are covered and who obtains them. Those without such clout are the losers in this process. Unproductive rent-seeking is encouraged. Moreover, losers in this competition have little recourse, breeding discontent.

Moving Medicare to a premium support program alleviates these problems. This is where seniors receive a voucher to purchase a health insurance plan of their choice. If the plan costs more than the support amount, individuals may add their own funds to purchase the plan. Spending growth can be limited simply by limiting the growth in the dollar amount that individuals receive. This does not have the negative consequences of limiting provider reimbursement rates or limiting procedures. Reimbursements to providers are at market rates and so there are no shortages or non-price rationing. Individuals decide plan coverage on their own without government mandates. They economize on the coverages that are least valuable to

them. There is no unsavory political determination of what is covered. This saves on the wasteful costs of rent-seeking and eliminates the social discord from political infighting.

VII. Conclusion

With forecasts indicating that Social Security and Medicare will take another 3.5% of GDP, it is not surprising that many analysts are concerned. As noted above, this is the spending equivalent of adding another Department of Defense to the budget, plus a little more. In gauging the causes of this increase, we find that a good deal of it is due to the rising population of seniors who will become eligible for these programs. However, a good deal also is due to forecasted rising real benefits per senior. The latter provides an opportunity for limiting the growth of spending without cutting benefits. Simulations indicate that limiting benefits to their real, per senior value in 2017 can have quite substantial effects. Rather than spending rising to 12% of GDP and stabilizing there, spending would rise to only 9% of GDP and then fall. However, it is important to implement spending limitations that avoid price controls, non-price rationing, and politically determined coverages. Adopting a premium support program for Medicare, with a cap on spending, is an amenable of avoiding these problems.

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