Chairman Enzi

Question. There is a growing body of academic research that argues for a connection between changes in regulation and economic growth. For example, work by John Dawson and John Seater found that the growth of regulation from 1949 through 2005 resulted in an annual 2 percent drop in economic growth. Also, a 2005 World Bank study found that a 10 percent growth in regulations is associated with a half percentage point reduction in per capita personal income. If increased regulation does slow the pace of economic growth and economic growth is a key factor in the growth of federal revenues, would a reduction in economic regulatory burden lead to a growth of revenues above the current law baseline? If so, what is a reasonable “rule of thumb” that can be used when thinking about the relationship between changes in regulation and changes in federal revenues in the 10-year baseline? Would a less restrictive regulatory environment result in an improvement in the long-term budget outlook?

Answer. Economic growth is one of the key factors that determine federal revenues, but the relationship between regulation and economic growth in the long term is not so straightforward. Some regulations would facilitate economic growth; others would diminish it. The economic effects of regulation depend greatly on the specifics of the regulations involved.¹ For that reason, CBO does not have or expect to develop a general rule of thumb about the relationship between changes in regulation and changes in federal revenues.

Most researchers who have studied the effects of regulation on economic growth have had difficulty distinguishing between the effects of regulations and the effects of other factors that have changed in the United States over long periods and that differ among countries. Either they have focused on associations between the number of pages of regulations issued (ignoring the content of those pages) and the changes in output in the United States over time, or they

have examined the regulatory environments and output levels of different countries in an attempt to draw conclusions about the relationship between the two. Thus, that research provides little guidance about how to quantify the potential effects of changes in specific regulations.

Making the regulatory environment less restrictive could increase federal revenues above CBO’s current baseline projections and could thereby reduce the amount of federal debt held by the public in the long term, but the effects of such action would depend on which restrictions were relaxed rather than on the overall amount of regulation that remained in place. Lessening regulation could affect businesses’ incentives to invest and hire, the prices that people pay for goods and services, the expectations that businesses and individuals have about their future income, their assessment of how uncertain the outlook is for government policies and economic conditions, and other factors that influence economic behavior and thus output. Some such changes would boost economic growth and generate more federal revenues, but making regulations less restrictive could also have effects—such as increasing the risk of a crisis in the financial system—that would decrease economic growth and revenues and increase debt. In addition, loosening regulations could increase risks to people’s health and safety; such potential effects are not reflected in analyses of regulation that consider only its effects on economic output.

Society’s decisions about whether and how to regulate certain activities generally involve balancing the advantages and disadvantages of the regulations being considered. Well-designed regulations provide such benefits as reducing damage to people’s health or to the environment, limiting the risks posed to the economy by the financial system, or advancing some other social goal. But most regulations also impose costs on businesses, their workers, and their customers that must be weighed against those benefits: They may restrict choices, decrease output, or reduce employment. Poorly designed regulations provide fewer benefits or have greater costs—which may include more significant reductions in economic output—than well-designed regulations. Analysis of a regulation’s benefits and costs—not just of its effect on economic output and the federal budget—would provide a more comprehensive assessment of its effects.

**Question.** According to the National Center for Health Statistics, the U.S. fertility rate has declined from 2.12 in 2008 to 1.86 in 2013. The U.S. Census Bureau recently revised its long-term fertility assumption to 1.86. CBO’s latest long-term projections utilize the 2.0 fertility rate from last year’s Social Security trustees’ report. Please perform a sensitivity analysis of the impact of lower fertility on its long-term budget projections utilizing the Census Bureau’s assumptions.

**Answer.** A long-term fertility rate of 1.86 children per woman would result in budgetary outcomes that were slightly worse than those in CBO’s baseline projections, which were based on a rate of 2.0 children per woman. With that lower fertility rate, CBO projects that in 2040 the deficit would be 6.2 percent of GDP and federal debt held by the public would be 105 percent of GDP rather than the 5.9 percent and 103 percent projected under the extended baseline without macroeconomic feedback. The 75-year actuarial balance for Social Security (that is, the sum of the present value of projected tax revenues and the current trust fund balance minus the sum of the present value of projected outlays and a target balance at the end of the period) would be a shortfall of 4.8 percent of taxable payroll—0.5 percentage points larger than projected under the extended baseline. Those differences stem primarily from the reduction in the size of the labor force that would be brought about by the lower
fertility rate. In CBO’s judgment, the fertility rate could well be 0.14 children per woman lower (1.86 children per woman) or higher (2.14 children per woman) over the long term than the rate that the agency used in its baseline projections.

**Question.** The historical rate of decline in mortality varies by age and sex. CBO’s methodology assumes a uniform rate of decline (1.2 percent) at all ages for both men and women. Please provide a sensitivity analysis of a differential decline in mortality on its long-term budget projections utilizing historical data (1950–2010).

**Answer.** Over the 1950–2010 period, men and women experienced the same decline in mortality rates—about 1.2 percent per year—but the rates of decline varied by five-year age group. For the younger age groups, mortality rates fell by almost 3 percent per year, but for the older groups, the decline was only about 0.5 percent. In CBO’s judgment, such variation by group is reasonably likely to occur in the future, but the agency does not incorporate differences by age and gender in its central estimates because a number of factors—such as smoking habits, improvements in medical technology, environmental conditions, and health behaviors—have had significant effects on changes in mortality rates for different groups since 1950, and the effects those or similar factors will have on mortality rates in the future are unpredictable.²

If the rate of decline in mortality for each five-year age group of men and of women equaled its average from 1950 to 2010, then in 2040 the average age of the population would be slightly younger—and the federal debt held by the public would be slightly lower (101 percent of GDP)—than CBO projected under the extended baseline. The 75-year actuarial shortfall for Social Security would be 4.1 percent of taxable payroll—0.3 percentage points less than projected under that baseline.

**Senator Corker**

**Question.** Director Hall, during the hearing you said that investment in infrastructure creates growth in the economy, but how we pay for it also impacts economic growth. Currently, the Highway Trust Fund functions as a trust fund that is sustained by user fees. Does CBO have a view on a method of funding the highway trust fund at current spending levels that would bring about the greatest economic growth?

**Answer.** The method used to pay for highway spending—whether it is charging user fees, assessing taxes that provide general revenues, or using some combination of both—may affect economic growth. Levying some types of user fees—such as congestion charges or tolls that substantially reduced traffic congestion—could increase such growth in the long term above what is projected under CBO’s extended baseline. Charging other types of user fees—such as the current taxes on motor fuels and diesel fuel or per-mile charges (also known as vehicle-miles-traveled taxes)—would provide some incentives for efficient highway use but would do less to promote economic growth. Taxes that yielded general revenues would, in many cases, be less beneficial for growth than charging a user fee. CBO has not, however, estimated the effects on output of raising additional revenues by each of the methods that could be used to fund highways.

Charging drivers for their use of roads could increase economic output in at least two ways. First, user fees can allow highly valued transportation to move more quickly and reliably. Second, when such charges keep traffic flowing, they can even increase the total volume of traffic per hour that can be accommodated by roads. That counterintuitive effect occurs because user fees, by diverting even a relatively small number of users to other roads, can cause speeds to rise sharply, increasing the total number of vehicles that can pass through a bottleneck during peak periods.\(^3\) If such charges were imposed, when avoiding delays was a priority, drivers could opt to pay for the use of a less congested road, and when travel speed was less important, they could use a road with a lower fee or with none at all.

Besides affecting travel, congestion charges and tolls provide important information for highway-spending decisions by showing how much drivers value the use of a road. Over time, with more use of such pricing, spending could shift from less productive to more productive uses of highways. Such a shift could also increase economic growth.

Levying user fees has some potential drawbacks, however. Charging drivers to use roads could raise concerns about privacy, depending on the methods used. Such fees could also place a proportionately greater burden on low-income households, as do the existing fuel taxes. Moreover, highway users could view the tolls as unfair if they believed that they had already paid for the roads through gasoline taxes over the years. Finally, although the costs of charging drivers for their use of roads continue to decline with improvements in technology, the costs remain higher than those for collecting revenues through the gasoline tax.

**Question.** Income inequality is often invoked as something that government policies have caused. Is CBO aware of any policies that Congress has put in place that have exacerbated income inequality over the years, or are fluctuations in income inequality due more to external social and economic factors like technological advances and globalization?

**Answer.** The amount of income inequality can be evaluated using two measures of household income: income before accounting for the direct effects of government transfers and federal taxes—that is, market income—and income after accounting for those effects. Examining the difference between the distribution of market income and the distribution of after-tax income is one way to assess how government policies have affected income inequality.

A common summary measure of income inequality is the Gini index, which ranges from zero (the most equal distribution) to one (the least equal). By that measure, CBO estimates that government transfers and federal taxes reduced income inequality by 26 percent in 2011, the most recent year for which CBO has produced estimates.\(^4\) Over the 1979–2011 period, CBO estimates, the reduction in inequality from government transfers and federal taxes ranged from 19 percent to 26 percent. Transfers reduce income inequality because, on average, lower-income households receive a larger share of transfer payments relative to their market income than higher-income households. The federal tax system also reduces income inequality.

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4. CBO estimates that the Gini index for market income was 0.59 in 2011 and that the index for income after taxes and transfer payments was 0.44. See Congressional Budget Office, *The Distribution of Household Income and Federal Taxes, 2011* (November 2014), [www.cbo.gov/publication/49440](http://www.cbo.gov/publication/49440).
because, on average, higher-income households pay a larger share of their income in taxes than lower-income households.

Although government transfers and the federal tax system as a whole have reduced inequality, various specific policies have increased it. For example, certain deductions allowed in calculating taxable income—those for mortgage interest on owner-occupied residences, taxes paid to state and local governments, and charitable contributions—have increased inequality in after-tax income.5

Government policies, along with external social and economic factors, also affect the distribution of market income, but those effects are much harder to identify and quantify. Although changes in technology and globalization have probably had an impact on the distribution of market income, it is difficult to disentangle the relative importance of those factors from all other factors that may have affected that distribution, including government policies.

Senator King

Question. The CBO report projects that economic growth will be slower in the future than it has been in the past largely because of a slowdown in the growth of the labor force resulting from the retirement of members of the baby-boom generation, declining birthrates, and the leveling-off of increases in women's participation in the labor market—but the report neglects to mention income inequality as a contributing factor to the stagnant economy. CBO has the capacity to estimate income inequality—its annual report, The Distribution of Household and Federal Income, details average federal taxes by income group and includes before- and after-tax income as well as taxes paid for each group. The last report, released in November 2014, included data for 1979 through 2011. To what extent does income inequality contribute to slower macroeconomic growth?

Answer. The effect of income inequality on economic growth over the longer term is not clear. Economists have found mixed theoretical and empirical results—some studies conclude that income inequality leads to faster growth, others argue that it slows growth, and still others find that it has no effect on growth whatsoever. As a consequence, CBO does not explicitly model the impact of income inequality on economic growth. However, CBO's economic projections implicitly include some effects of income inequality to the extent that past changes in income inequality have affected underlying trends in the economy. Economists continue to study the issue, and CBO will update its analysis if the research in this area provides a more definitive conclusion.

Question. To what extent does a slow-growing economy diminish capacity to address the federal debt burden?

Answer. A slow-growing economy puts pressure on the federal budget primarily by constraining the growth of taxable income and therefore of federal revenues. For example, CBO's “rules of thumb” indicate that if the growth rate of real (inflation-adjusted) gross domestic product was 0.1 percentage point lower each year than the rate in CBO's baseline

projections, the federal deficit in 2025 would be $69 billion (or 6 percent) bigger than the baseline deficit. Over the 2016–2025 period, the cumulative deficit would be $326 billion greater than that in the baseline. Of that $326 billion difference, $288 billion would result from lower revenues. To make up for the effects of the slower growth, the federal government would have to make larger reductions in spending, larger increases in taxes, or some combination of the two in order to reduce federal debt to some targeted level.

**Question.** How would decreasing income inequality improve the long-term budget outlook?

**Answer.** For a given total amount of income, a more even distribution of income could have several budgetary consequences, which could have mixed effects on the long-term budget outlook. CBO has not determined what the net effects of such a change might be; they would depend in part on how and why the change in income distribution occurred.

Two possible effects would tend to improve the long-term outlook. First, if a reduction in earnings inequality increased the share of earnings that fell below the taxable maximum for Social Security taxes, it would raise receipts from payroll taxes, the second-largest source of federal revenues; however, that increase in receipts would be partially offset in the long run by greater outlays for Social Security benefits. Second, less income inequality could reduce outlays for means-tested transfer programs such as Medicaid.

A reduction in income inequality could, however, have two other effects that would tend to worsen the long-term outlook. Such a reduction implies a shift in the earnings distribution from higher-wage earners to lower-wage earners, which would probably reduce revenues from individual income taxes, the largest source of federal revenues. That is because lower-wage earners face lower income tax rates than higher-wage earners. Also, less income inequality would probably raise interest rates. Because higher-income households tend to save a greater proportion of income, CBO estimates that a shift in the distribution of income to lower-wage earners would (other things being equal) decrease the total amount that households saved and that was available for investment, in turn reducing the amount of capital per worker. Consequently, the rate of return on private capital would increase, and thus the return on alternative investments—including Treasury securities—would increase as well, meaning that the government would spend more on interest on debt held by the public.

**Senator Whitehouse**

**Question.** In the *Long-Term Budget Outlook*, CBO estimated that national spending on health care will continue to grow faster than the economy, rising from 16.4 percent of GDP in 2013 to 25 percent of GDP by 2040. If instead of rising, national spending on health care remained at 16.4 percent of GDP through 2040, what would the deficit and debt be in that year?

**Answer.** If national and federal health care spending were held constant as a share of GDP, federal deficits and debt in 2040 would be substantially lower than current projections. Although CBO cannot at this time provide a quantitative estimate that captures all of the major budgetary effects, the agency can provide a partial answer.

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One estimate that CBO can readily provide is what would happen to federal deficits and debt if the share of GDP spent on the major health care programs—Medicare, Medicaid, the Children’s Health Insurance Program, and the subsidies provided through insurance exchanges—was held constant through 2040 at its percentage in 2013. Under that scenario, the agency estimates, the deficit in 2040 would be about 0.5 percent of GDP (compared with 6.6 percent under the extended baseline with macroeconomic feedback), and debt held by the public would be about 51 percent of GDP—roughly half of the amount of debt that is projected for 2040 under current law. That calculation takes into account the cumulative effects of lower federal spending on health care, the resulting savings in federal interest payments, and the budgetary effects of the faster economic growth that would stem from reduced federal borrowing. The analysis also reflects the assumption that spending and revenues would otherwise be unchanged from current-law projections.

If national health care spending was held constant as a share of GDP and the costs of the major health care programs were affected proportionally, then other spending and revenues would change. Reducing exchange subsidies would increase the supply of labor and change the percentage of people with employment-based insurance coverage. On net, those changes would probably increase federal revenues. Moreover, smaller increases in private health care spending would make more compensation taxable, raising federal revenues from income and payroll taxes but reducing the revenues derived from the excise tax on certain high-premium insurance plans that is scheduled to take effect in 2018; higher taxable earnings would also raise future Social Security benefits, albeit with some lag. Finally, lower federal borrowing overall would spur economic growth, further reducing deficits. Calculating the net budgetary impact of all those effects is difficult, however. Moreover, that impact would depend in part on how and why the changes in projected health care spending occurred. Therefore, CBO has not quantified it. Because the agency has not been able to project the path of deficits under this scenario, CBO cannot provide a full estimate of the cumulative effects on federal debt—but that estimate would be lower in 2040 than the 51 percent of GDP estimated for the case discussed above, in which only the share of GDP spent on the major health care programs was held constant.

Holding national and federal spending on health care constant as a share of GDP over a long period is unprecedented and would be very difficult to achieve. Doing that, for example, would require reducing spending for the government’s major health care programs below the amount projected in CBO’s extended baseline by about 40 percent in 2040. Because the population is aging, the share of people projected to receive federal health care benefits is projected to increase, boosting total spending; holding total spending as a share of GDP constant would thus require costs per beneficiary to grow about 1 percent per year more slowly than potential GDP per capita, CBO estimates. By comparison, CBO estimates that health care spending per capita grew about 1.4 percent faster than potential GDP per capita over the 1985–2013 period—a calculation of “excess cost growth” that gives greater weight to the slow growth observed in recent years. CBO projects that over the 2016–2040 period, excess cost growth for Medicare and Medicaid will be lower than the historical average but that it will still average about 0.8 percent per year. The likelihood that federal spending on health care under current law will remain constant as a share of GDP for the next 25 years thus appears small. Because the federal government has limited control over or influence on health care spending in the private sector, designing policies to constrain the growth of total health care spending would be particularly challenging.
Question. If instead of rising, national spending on health care fell to 12 percent of GDP, the level the OECD has estimated the Netherlands, the next highest country after the United States, spends on health care, what would the deficit and debt be in 2040? For purposes of this estimate, you can assume that national spending on health care in the U.S. falls arithmetically to 12 percent over the next decade.

Answer. CBO cannot at this time provide an estimate for a scenario in which total health care spending fell to 12 percent of GDP—that is, fell by about one-quarter from its 2013 level—but the agency can readily provide an estimate of what would happen to federal deficits and debt if spending on the government’s major health care programs measured as a share of GDP fell by about one-quarter over the next decade and then remained constant through 2040. Under that scenario, the agency estimates, the federal budget in 2040 would show a surplus of about 2 percent of GDP and debt held by the public would fall to about 24 percent of GDP—roughly one-quarter of the amount of debt that is projected for 2040 under current law. As above, that calculation takes into account the cumulative effects of lower federal spending on health care and the resulting savings in federal interest payments and the budgetary effects of the faster economic growth that would stem from reduced federal borrowing—but it also reflects the assumption that spending and revenues would otherwise be unchanged from current-law projections.

If the share of GDP spent on health care nationwide fell by about one-quarter from its current level and federal costs were affected proportionally, federal revenues and other components of the budget would also be affected in the ways discussed in the previous answer. Calculating the overall budgetary effects of such a significant change in projected spending on health care is therefore difficult. Although CBO has not estimated the overall effects on federal deficits and debt, if the total share of GDP spent on health care fell sharply, debt would be lower than the 24 percent of GDP estimated for the case in which only the share of GDP spent on the major health care programs was reduced.

As indicated in the answer above, substantial reductions in national and federal spending on health care as a share of GDP are extremely unlikely to occur under current law and would be very difficult to achieve through policy initiatives.

Senator Wicker

Question. Director Hall, I thank you for your resolve to improve CBO and increase transparency. During our last Senate Budget Committee hearing, you discussed your plans to promote innovative health-care models by adapting CBO methodology to incorporate data and hard evidence. In Mississippi and throughout the country, innovative telehealth services are being used to help patients manage chronic disease, avoid expensive emergency and hospital visits, and live healthier lives. Medicaid data in Mississippi has shown that telehealth encounters can replace costly hospital visits and ultimately save taxpayer dollars. However, I understand that the Congressional Budget Office has historically considered Medicare coverage of telehealth services as a cost rather than a cost-savings, even if the service avoids the patient’s incurring larger medical bills. I would like to ask you what additional data CBO needs with respect to Medicare reimbursement for telehealth and remote patient monitoring services in order to score these services as a true cost saver?
Answer. Whether expanding Medicare coverage for telemedicine services would increase or
decrease federal spending is difficult to predict, but doing so depends on two main
considerations:

- The payment rates that would be established for those services, and
- Whether those services would substitute for (or reduce use of) other Medicare-covered
  services or would be used in addition to currently covered services.

If all or most telemedicine services substituted for or prevented the use of more expensive
services, coverage of telemedicine could reduce federal spending. If instead telemedicine
services were mostly used in addition to currently covered services, coverage of telemedicine
would tend to increase Medicare spending. Many proposals to expand coverage of
telemedicine strive to facilitate enrollees’ access to health care. Therefore, such proposals could
increase spending by adding payments for new services instead of substituting for existing
services.

Because coverage of telemedicine services in Medicare’s traditional fee-for-service program is
limited, so is evidence about the effects of such coverage. Thus, CBO must often draw
inferences from other sources—such as the experience of private managed care plans—when
developing cost estimates. However, an important limitation of that evidence is that private
plans generally have more ways to influence doctors’ choices and to limit the services that
their enrollees use than are available in Medicare’s fee-for-service program (which the
Department of Health and Human Services and its contractors run). As a result, even if
coverage of telemedicine reduced net costs for some private plans, the greater difficulties
involved in ensuring that services are used appropriately in the fee-for-service Medicare
program mean that proposals to expand coverage of services in that program could increase
federal spending.

CBO analyzes proposals to expand Medicare coverage of telemedicine on a case-by-case basis.
The agency considers the design of those proposals—including what services would be
covered under what circumstances and how their payments would be determined—as well as
any relevant evidence. Having more evidence about how the telemedicine coverage affects
spending would thus be useful. The results of a demonstration project conducted within the
fee-for-service Medicare program would be particularly useful, especially if the approach
tested was similar in its design to the specifications defined in a legislative proposal.

Proposals related to telemedicine have generated substantial interest among lawmakers and
Congressional staff. Therefore, CBO has prepared the discussion below, which further
describes the issues that arise in defining a telemedicine benefit and how CBO estimates the
budgetary effects of those proposals.

Defining a Telemedicine Benefit. Telehealth or telemedicine—which simply means health care
provided at a distance—encompasses an array of services. Telemedicine services include
virtual visits with doctors or other professionals, remote monitoring of patients’ conditions,
and off-site analysis of medical imaging or test results. Providers may offer telemedicine
through various means of communication, including phone calls, video chats, text messages,
email, and websites. With the varied possibilities, proposals to expand coverage for
telemedicine or telehealth services in Medicare would need to define several factors, including:
The services that would be covered and their allowed methods of delivery,

The types of providers and sites of care that could be paid to offer those services, and

The types of patients or beneficiaries who would be eligible to receive such services.

Proposals would also need to specify how to determine Medicare’s payments for those services (for example, whether payments would equal Medicare’s fees for physicians’ services provided in person or would be some percentage of those fees).

CBO’s analysis of such proposals would take into account how they differed from Medicare’s coverage of telemedicine services under current law. Now, Medicare providers can be paid to furnish certain telemedicine services by using specified methods and sites of service—but only for patients who live in rural areas. (Those patients generally visit a facility that has some staff but that accesses some doctors remotely.) In general, Medicare pays the distant doctor or other provider of telemedicine the same fee that Medicare would have paid for an in-person office visit, and the site where the patient receives the services is paid a facility fee. Medicare’s total payments are thus higher for telemedicine services than for equivalent services delivered conventionally. Whether similar arrangements would apply for any expansion of coverage for telemedicine depends on the details of legislative proposals.

How CBO Estimates Effects on Spending. CBO seeks to incorporate information from a variety of sources when estimating how proposals to expand telehealth or telemedicine services that Medicare covers might affect the budget. Those sources include available data about the costs of covering similar services and the results of academic studies investigating how telemedicine affects health care spending. In particular, CBO considers the evidence about spending on telemedicine services in Medicare itself, in the Department of Veterans Affairs, and in the Medicaid program. CBO also considers evidence about the use and effects of telemedicine in Medicare Advantage plans (private plans delivering Medicare’s benefits) and other private health plans. In doing so, the agency accounts for the potential differences in benefit management between private and public plans noted above. CBO also consults experts who help the agency understand how telemedicine may affect health care spending.

Considerable uncertainty surrounds estimates of the likely utilization rates for covered telemedicine services themselves and of the downstream effects on other services that might be induced or avoided. In its analysis, CBO examines whether use of telemedicine as proposed would prevent the use of more expensive services, such as emergency room visits or hospital admissions, or would instead increase the use of other services to provide follow-up care.

To some extent, proposals to expand coverage may reflect a “long-standing hope that telehealth could be used to overcome a lack of local medical and surgical subspecialists in rural areas.” Although offering telemedicine to rural enrollees could improve the quality of care that such enrollees receive and could be more convenient for them, doing so might not reduce Medicare spending on their care. More broadly, if rural or urban enrollees would otherwise not have received care because of difficulties in obtaining access to doctors, providing telemedicine might well increase spending on services Medicare covers instead of substituting for services that would have been covered without telemedicine. Without other constraints,

the added convenience for enrollees of receiving telemedicine rather than face-to-face care could increase their demand for and use of Medicare-covered services. Provisions governing the cost-sharing requirements that enrollees face for telemedicine services would also affect their demand for those services.

Because Medicare coverage of telemedicine is limited, CBO does not have extensive data that would help project how expanding such coverage would affect federal spending in the Medicare program. CBO’s analysis would benefit from having the results of new and well-designed academic studies examining how introducing telemedicine services would affect health care spending in the Medicare population. The results of a demonstration project conducted in the fee-for-service Medicare program could be especially valuable in light of the particular challenges of controlling spending on new benefits in that program.