

# Medicare Low-Cost and High-Cost Projections

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# Introduction

- Last fall, Treasury staff requested that CMS develop methods for doing “low-cost” and “high-cost “ projections based on the scenarios like those done for OASDI.
- This morning CMS reported on the methods it developed and their implications for the projections.
- These methods appear to be a clear improvement over TR2016 methods and should be further developed and implemented for TR2017.
- I will first discuss the purpose of the alternative projections, and what is meant by low and high cost.
- I will then comment on features of the new methods that CMS cites as challenges, either in their presentation, or on other occasions.
- A strong case can be made that these challenges can be overcome in time for the development of the TR2017.

# Purpose of Alternative Projections, and What is Meant by “Low” and “High” Cost

- The purpose of alternative projections is to give policymakers a range (rather than just a point estimate) for the size of reforms necessary to make a program solvent or sustainable.
- Most would agree that policy should focus on long-range sustainability, and the single best measure of that for OASDI and Medicare Hospital Insurance is the 75-year actuarial balance (AB75).
  - The numerator of AB75 is the trust fund balance less the present value of net costs over 75 years (and less the PV of year 76 costs).
  - Net costs are gross costs less non-interest income.
  - I will say something about SMI later in my presentation.

# Purpose of Alternative Projections, and What is Meant by “Low” and “High” Cost

- This is how the alternatives are defined for the Social Security (OASDI) Trustees Report.
  - While the OASDI Trustees Report describes its alternative projections as “low-cost” and “high-cost”, those are misnomers and cause lots of confusion.
  - The low-cost and high-cost OASDI projections are actually low-net-cost and high-net-cost projections.
- Henceforth, I will refer to the low-cost and high-cost scenarios as low-net-cost and high-net-cost scenarios.

# Purpose of Alternative Projections, and What is Meant by “Low” and “High” Cost

- To avoid unnecessarily complex statements, in most of what follows I consider only low-net-cost projections.
- For the OASDI low-net-cost scenario, each assumption determining net costs is varied from the intermediate value in a direction that lowers net costs (and improves the AB75).
- An OASDI low-net-cost assumption may cause gross costs to be higher, but net costs to be lower, than the intermediate projection.
  - For example, consider the assumption for real wage growth. Relative to the intermediate projection, the OASDI low-net-cost projection assumes higher real wage growth, and this assumption results in higher gross costs, higher gross income, and lower net cost.
  - The fact that a so-called “low-cost” assumption raises gross costs causes lots of confusion. Formally changing the labels would make it clear we are focusing on net costs.

# Purpose of Alternative Projections, and What is Meant by “Low” and “High” Cost

## One Viewpoint

- The Medicare alternative projections should be patterned after the OASDI alternative projections.
- The assumptions underlying the alternative projections should aim to yield a range for AB75.
  - To avoid confusion, the alternative should have labels low-net-cost and high-net-cost.
  - Relative to the intermediate projection, each low-net-cost assumption should raise (improve) AB75, and each high-net cost assumption should lower (worsen) AB75.

# Potential Objections to the Revised Methods

- I will discuss the following potential objections to the revised methods:
  - An assumption is required about how health care costs change by age and sex as life expectancy changes.
  - The low-net-cost assumption for real wage growth leads to real (gross) costs higher than in the intermediate projection.
  - While the low-net-cost scenario for HI has real costs lower than the intermediate projection, it has higher nominal costs.
  - The low-net-cost scenarios for SMI and HI may not align in the sense that a low-net-cost assumption for SMI is a high-net-cost assumption for HI.
  - Low-net-cost short-run utilization assumptions must be unreasonably low to offset effect of real wage growth on short-run reimbursement rates.
  - Relative to the intermediate projection, the low-net-cost scenario has utilization lower in the short run and higher in the long run.

# 1. An assumption is required about how health care costs change by age and sex as life expectancy changes.

- Currently, CMS assumes relative health care expenditures by age and sex are unchanged throughout the 75 year projection.
- As both male and female life expectancy at age 65 are projected to increase about 3-1/2 years between 2015 and 2090, the implicit assumption is that relative costs by age do not vary with life expectancy.
  - If this is a good assumption for the intermediate projection, then presumably it is also a good assumption for the low-net-cost and high-net-cost projections.
  - If this is a bad assumption for the intermediate projection, then it is an even worse assumption for the high-net-cost projection. In that projection, the projected expectancy increase over 75 years is nearly twice as large



# 1. An assumption is required about how health care costs change by age and sex as life expectancy changes.

## The Upshot

- No matter how the low-net-cost and high-net-cost projections are done, the question of how relative health care costs by age change with life expectancy must be addressed.
- CMS may conclude that there are as many reasons to believe increased life expectancy will cause the cost rise with age to be faster as there are reasons to believe the opposite. In that case, the current assumption may be justified.
  - This issue is not pertinent for deciding whether to adopt OASDI methods for the alternatives.

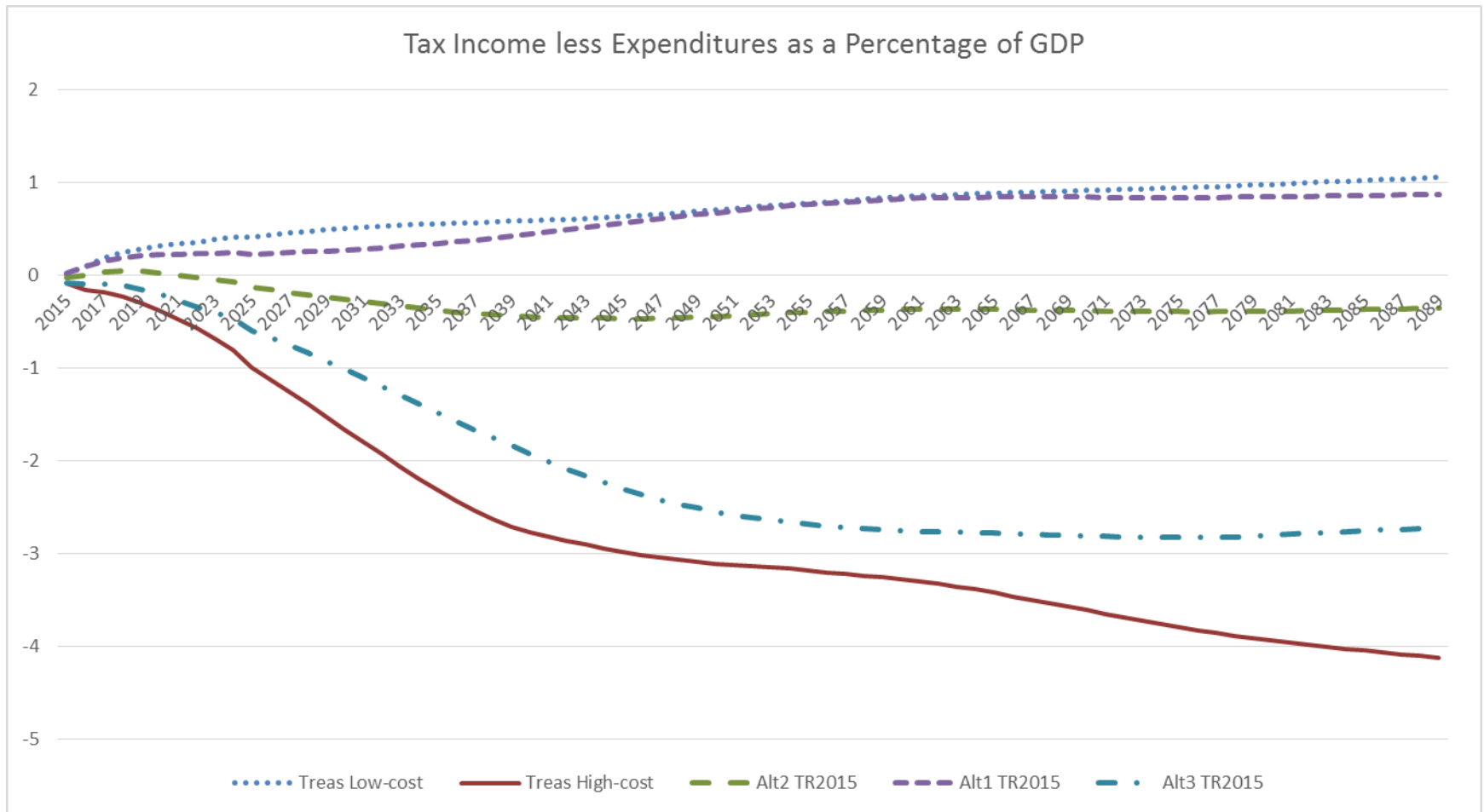
## 2. Low-Net-Cost Assumption for Real Wage Growth Leads to High (Gross) Costs

- For the short-run HI projections, high real wage growth:
  - Raises HI reimbursement rates and thereby raises per-beneficiary real costs.
  - Raises real taxable payroll and thereby raises per-worker real taxes.
  - Reduces real net HI costs.
- Because high wage growth leads to low HI net costs, it is appropriate to consider it a low-net-cost assumption.
  - This is analogous to the effect real wage growth has on the OASDI projections.

### 3. The low-net-cost scenario for HI has higher nominal costs than the intermediate projection.

- Relative to the intermediate projections, CMS's exercise low-net-cost scenario has lower real costs but higher nominal costs than the intermediate projection.
  - This is true because high price inflation boosts nominal revenues more than it does nominal costs. Hence, the low-net-cost scenario has high price inflation.
  - This is also true of the OASDI low-net-cost scenario.
- It would avoid confusion if alternatives should be defined with regard for net-costs rather than gross costs. Relative to the intermediate projection, it is possible (but not likely) that the low-net-cost scenario leads to higher nominal net costs but lower real net costs.
- A strong case can be made the real net costs are what should be considered.
  - Budget analysts pay close attention to nominal income and outgo over ten years, but mostly with regard to scoring new policy, not for assessing baseline income and outgo.
  - Nominal costs are much less economically meaningful than real costs. Real costs determine the financial health of the program.
  - Under this logic, the presentation of the alternative projections should feature net costs expressed as either a share of taxable payroll, or GDP. While nominal costs would be shown in a table, they need not be discussed.

# CMS Exercise Values for -Net Cost/GDP



## 4. The low-net-cost scenarios for SMI and HI may not align

- For HI, the low-net-cost scenario has high real wage growth because high real wage growth boosts real income more than it boosts real outlays.
- For SMI, there are no dedicated revenues, so it might seem that the low-net-cost scenario should have low real wage growth.
- However, SMI does get general revenues, and general revenues are boosted by high real wage growth.
- One proposal is that low-net-cost and high-net-cost assumptions for SMI be determined in accordance with how the assumptions affect SMI costs expressed as a share of GDP.
  - GDP is a proxy for the government's capacity to raise general revenues.
  - In this case, the low-net-cost scenario for SMI would align with that for HI - in both cases high real wage growth promotes the financial health of the program.

## 5. Low-net-cost short-run utilization assumptions unreasonably low

- CMS cautions that “[Short-run] utilization assumptions that are required to obtain plausible variation between the alternatives may not be considered reasonable”
  - CMS varied short-run utilization assumptions to get what it views as reasonable bounds on gross costs.
  - Because the low-net-cost real wage growth assumptions raises gross costs (but lowers net costs), utilization must be very low if the objective is to get a reasonable lower bound on gross costs.
- However, if the objective is to get reasonable bounds on real net costs or net costs expressed as a share of taxable payroll or GDP, the utilization assumption complements rather than offsets the real wage growth assumption, so utilization would not have to be unreasonably low in the low-net-cost scenario.

## 5. Low-net-cost short-run utilization assumptions unreasonably low

### The Upshot

- If the alternatives are defined with regard to net cost rather than gross cost, this is not an issue.

## 6. Utilization Assumptions are not Consistent for Short-Run and Long-Run

- For the short-run projections, CMS assumes that volume and intensity growth (growth of utilization and case mix) are independent of the economic and demographic assumptions. CMS therefore specifies low-net-cost utilization assumptions directly, and they are lower than those for the intermediate assumptions.
- For the long-run projections, the “Factors Model” makes volume and intensity growth (VIG) a function of real income and the relative price of health care.
  - VIG (demand growth) is higher the higher is real income.
  - Hence long-run low-net-cost VIG rates are higher than those for the intermediate projection.



## 6. Utilization Assumptions are not Consistent for Short-Run and Long-Run

- Modeling for the short-run and long-run intermediate projections can be interpreted in a way that makes the methodologies consistent.
- However, CMS's exercise long-run low-net-cost projections are not done in a manner consistent with this particular interpretation of the short-run and long-run methodologies.
  - This is easily remedied

## 6. Utilization Assumptions are not Consistent for Short-Run and Long-Run

- One point of view is:
  - The Factors model captures the broad forces that drive volume and intensity growth in both the short- and long-run.
  - Other factors not included in the Factors model are also at work in all years.
  - For example, it might be that volume and intensity growth in year t is the factors model projection (FMt) plus a random error that has an autoregressive component and a random walk component:

$$VIG_t = FM_t + v_t + \varepsilon_t$$

$$v_t = \lambda v_{t-1} + \omega_t$$

$$\varepsilon_t = \varepsilon_{t-1} + \eta_t$$

*$\omega$ 's and  $\eta$ 's I.I.D*

## 6. Utilization Assumptions are not Consistent for Short-Run and Long-Run

Intermediate VIG Projection, in the Context of the Example		
	Factors Model Component	Error Terms Component
Short-Run	Very little change over ten years. Essentially a constant, and small	CMS must estimate the latest error innovations, and their likely evolution. All of the action is here.
Long-Run	Changes slowly and smoothly, but the changes cumulate and are important	<ul style="list-style-type: none"> <li>a) Best projection for the autoregressive error component is zero.</li> <li>b) Best projection for the random walk component is constant at its estimated value for the last historical year.</li> </ul>

## 6. Utilization Assumptions are not Consistent for Short-Run and Long-Run

Low-Net-Cost Projection VIG Relative to Intermediate Projection, in the Context of the Example			
	Factors Model Component	Error Terms Component	Total
Short-Run	Higher because of high real wage growth, but not much	Lower due to low error term draws. All of the action is here.	Lower
Long-Run	Higher because of high real wage growth, by a lot	a) Lower due to low autoregression error term draws, but not by much b) Lower due to low random walk error term draws, possibly by a lot	Uncertain

## 6. Utilization Assumptions are not Consistent for Short-Run and Long-Run

- From this point of view:
  - CMS's intermediate projection methods are consistent with this conceptualization of the determinants of volume and intensity growth in the short-run and long-run.
  - CMS's current short-run low-net-cost projections can be rationalized within this combined FM-plus-errors model. Low-net-cost Intensity growth is lower than in the intermediate projection in the short-run because the error component is larger than the Factors Model component.

## 6. Utilization Assumptions are not Consistent for Short-Run and Long-Run

- However, CMS's exercise long-run low-net-cost projections are not fully consistent with this conceptualization of the determinants of utilization in the short-run and long-run.
  - The long-run low-net-cost projections just rely on the Factors, and do not take account the effect of a low draw from the error term distribution.
  - In the long-run, the error term component *could* be larger than the Factors model component, as it is in the short-run,
  - If the error term component dominates, volume and intensity growth in the low-net-cost scenario would be lower than for the intermediate scenario in both the short- and long-run.
  - If the FM dominates, the projection would still be logical and internally consistent.
- This new approach to utilization adds a bit of complexity but would be fairly straightforward for CMS to implement.

# Conclusions

- We appreciate the effort CMS has put in so far to developing an improved methodology
- We think the remaining challenges can be overcome in a fairly straightforward way
- The new methodology would align better with that used for OASDI and would be more economically meaningful than the existing methods