Getzen Model of Long-Run Medical Cost Trends

Update for 2019 – 2028

October 2018

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Update for 2019 - 2028+: *Abnormal Times But Similar Trends*

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The most likely outcome for the near future remains much the same, with similar average rates of increase but a lower than average level of confidence. Inflation, the most volatile factor in medical cost trend projections, has been relatively low over the last few years.[1] In the long run inflation should rise toward a more normal level by 2028 (baseline **2.4%**, up +0.2% from last year's update). The second parameter, real per capita GDP and wage growth, has been steady if hardly robust (baseline **1.5%**, down 0.1% from last year's update). The final and most critical parameter, excess cost growth due to technology and related system changes, has a baseline long-run estimate of ***1.2%***, down -0.1% from prior update. Continued slow growth in national medical expenditures per capita is the main reason for this slight downward revision. Excess medical cost growth is expected to remain between +1% and +2% on average, trending moderately downward as it has for the last 20 years. Overall, there is not much change in the baseline projections of medical cost increases. The slight reductions in the expected growth rates in real wages and technology trends offset the increase in inflation so the estimated nominal rate of medical cost increases for 2019 is ***5.2%***, the same as in last year's report.[1, 2, 3]

 Short Run Medical Cost Increases for 2019 – 2022 do not affect projected long-run rates for 2028+ in this model and could presumably be left out, but are of more interest to many actuaries than the long-run rates. Baseline short-run rates included here are generated by the lag regression model described in the technical manual, essentially equal to a smoothed 3-year moving average of inflation, a six-year moving average of real per capita income, and a technology factor of +1.2% based on smoothed moving average trends for actual excess cost growth (National Health Expenditure % - GDP %) over the last 50 years. Using a formula based on past trends has drawbacks but avoids the confusion that arises when judgment and speculation are mixed in with the results of technical analysis. Actuaries should change these baseline short-term rates to reflect their superior knowledge of local and plan-specific factors. In addition to shifting local market conditions, actuaries should also consider additional national forces such as the continued cost-shifting that has routinely caused private health insurance premiums to rise 1% - 2% faster than average medical costs, a surge in pharmaceutical pricing, and of course the impact of contemplated changes in state and federal legislation.

Technical Notes on LR Model Input Parameters

 The "Getzen Model" is a set of linked formulas to facilitate projections of average medical care cost increases over the long run. The formulas are embedded in a spreadsheet available on the SOA website. A "baseline" is presented on the "output" page of the spreadsheet that provides the consensus estimate of an expert project oversight group convened by the SOA. Actuaries should be aware that rates of increases for specific plans may often be above or below, or more variable than, the long-run average national rate of increase in medical costs which is the primary forecast target of the Getzen Model, and should be prepared to document and justify conditions or assumptions that deviate from the baseline trend projections. The model has three major sections:

 Years 1 - 4: short-term annual % increases (user modifiable)

 Years 5 - 9: linear transition.

Years 10+: long-run forecasts (per capita income+ inflation + X%)

A formula is used to reduce the estimated rate of cost increase once the health share of GDP exceeds a **resistance point**. A **year limit** specifies when further growth in medical costs is limited to the rate of increase in per capita income. This stabilizes the model and keeps unbounded growth from creating contradictions. Further explanation of model details, development, historical trends, sensitivity analysis and uncertainty are provided in the **Technical Manual** on the SOA website for actuaries and other users to consult.

Inflation / CPI: **2.4%** *(range 1.5 – 4.0).* 30-year average 1987-2017 of 2.2% with standard deviation of ±0.8% for deflator and 2.6% ±1.2% for CPI-U; five-year moving average ranges from 1.5% to 3.5%. CBO projects 2.1% for 2019-2029 and 2.0% thereafter for deflator, and 2.4% for CPI-U (Table 1-1, page 10, Table D-1 page 140)). The 2017 Medicare Trustees Report projects CPI-U 0f 2.6% for 2020-26 (Table V.B.2. p.179) and long run GDP deflator of 2.2% (page 162).[4] April 10, 2018 30-year TBond (3.02%) - TIPS (0.92%) implied inflation rate is 2.1%. Inflation is volatile and can change rapidly, confounding expectations. However, inflation is neutral over the long run and thus has no effect on the health share of GDP or annual percentage increases in real spending in this model.

Wages / real per capita GDP: **1.5%** *(range 0.0 - 3.2).* 30-year average 1987-2017 of 1.5% with standard deviation of ±1.5%; smoothed moving average range -0.3% to 3.7%. CBO projects 1.7% for 2019 and 1.1% thereafter (Table 1-1, page 10). 2017 Medicare Trustees Report projects scenarios from 0.6% to 1.8% and 1.7% long run 2041-2091 (Table II.C.1, page 13 and Table II.F.2. page 36). There is some controversy as to how much economic growth has or has not slowed since 2000, with experts expressing a variety of opinions.

Technology/excess cost growth: **+1.2%** *(range 0.5 – 2.5).* 30-year smoothed average 1987-2017 of +1.8% with standard deviation of ±2.2% and range of -0.2% to 4.3%, trending downward and averaging 1.3% over the last ten years. CMS OACT projects excess growth of 1.1% for 2020-2026 (Table 1). Medicare Trustee Report projects +0.6% for 2019 rising to 1.4% by 2023 falling to 1.2% in 2026 and then an average of +1.1% for 2027-2041 falling to 0.6% for 2067-2091 (Table V.B6, page 187 and p.161). Excess growth due to technology and related factors is the most crucial element of the model. Excess growth, not the level or nominal rate of spending growth, is the factor creating fiscal pressure on employers and government.

Health Share of GDP in 2028: **.205** *(range .175 to .235).* The expected 2028 share is equal to that projected by the CMS OACT for 2026 plus two additional years of excess growth at +1.1%, up slightly from last year's value. The main impact of this parameter comes from its interaction with the share resistance limit.

Share Resistance Point: **.250** *(range .15 to .35).* This is the share of GDP above which additional health spending is projected to meet increasing resistance. Actuaries expecting greater budgetary resistance to medical cost increases can set this parameter as low as .150, which has the effect of

bending the cost curve sooner (from 2024 onward) and more strongly, so that even in the long run medical costs are limited to less than .300 relative to GDP and wages. It is possible that the United States economy has already reached the resistance point where share resistance is already limiting health care costs. The POG is considering studying the possible impact of share resistance on short-term trend, the technology factor and the resistance point in future releases, and provides more detail on how alternative assumptions would affect projected growth rates in the *Technical Manual*.

Year Limit: 2075 *(range 2030 to 2098)*. This parameter sets the year in which spending is projected to match the rate of increase in wages so that the health share of GDP stays constant. The parameter assumption is unchanged from last year's model.

Annual Premium Increases have often exceeded the growth in medical costs per capita by +1% or more for extended periods, although in the long run the ratio of costs/premiums will stabilize so that these growth rates converge.

Short-term growth rates for 2019 – 2022: 5.4% - 5.2% *(range 4% – 8%*).* CMS OACT projects a low 5.2% for 2019 (less than 0.5% above GDP growth) and an anomalous jump to 6.1% in 2026, the final projection year. The baseline expectation here is for a temporary rise in spending before cost growth moderates toward the long-term trend. Note that in this model the short-term growth rate parameters do not affect the rates projected for 2028 and beyond. Long-run growth projections are determined solely by the inputs of long-run inflation, wage and technology factors, 2028 health share of GDP, resistance level and ultimate year limit.

*Short-term rates for specific groups may deviate substantially from the average national medical cost increases projected in this model due to plan designs (such as Rx only or Medicare Advantage), known rate increases at the time the valuation is performed, changes in state or federal premium taxes and fees or other factors. Significant changes to provider payment methods due to legislative or regulatory actions are apt to create perturbations. Actuaries should make use of such information and could justify expected short-term rates outside of the suggested ranges in some cases.

1. The revised Model 2019_a with an updated *Technical Manual and Documentation* is available on the SOA website under "Research Projects – Health."

2. CBO. *The Budget and Economic Outlook: 2018 to 2028.* USGPO, Washington, DC. April 2018.

3. CMS Office of the Actuary. *National Health Expenditure Projections 2017-2026.* Table 1: Selected Economic Indicators, Levels and Annual Percent Change: Calendar Years 2010-2026.

4. *2018 Annual Report of the Boards of Trustees of the Federal Hospital Insurance and Federal Supplementary Medical Insurance Trust Funds.* Washington, D.C., June 5, 2018.