SOA Long Term Trends Valuation Resource Model Webinar Questions
April 1, 2008

Questions and Answers:

Have you tested the model against some publicly-traded companies? If yes, how do the liabilities generated compare to what they carry on their balance sheet?

This is a good question that points out how the model can and cannot be used. The model provides annual % rates of increase in average medical costs. The liabilities for any particular company would depend on that factor, but also on how many beneficiaries were covered each year (closed group with mortality, or constantly replenished, and if so, by what fraction), the prior experience within that particular group, whether or not a cap on total payouts had been implemented, the flexibility of the benefit structure, etc.

Thus, one could take an existing projection and hold all its assumptions constant except that the set of annual % medical cost increases is changed to those from Getzen-SOA model and say "using these medical cost rates instead of the prior assumed medical cost rates raised (lowered) projected liabilities by $X million when all other assumptions were kept the same." That kind of comparison can be done. However, it does not actually "test" the model—merely indicates what the implications are. To actually test the model we would have to observe actual medical costs in 2010 and average growth rates 2011 to 2022. Until then, we can sort of "test" the model using common sense and historical experience.

Is the 5.2% growth rate in 2080 just the product of 3.2% CPI and 1.9% real growth?

It is best to look at the actual spreadsheet and see the calculation, but here is a brief explanation. The model works by calculating the per capita income in each year, and the share of that income spent on medical care. The growth rate is multiplicative, e.g. (1+pci%)x(1+cpi%)(1+technology%) and the "income effect" means that the 1.9% real growth is multiplied by the "income multiplier" of 1.40 (thus implying income-related growth of 2.66% per year). For the year 2010, multiplying all of these factors gives annual growth of 7.2%. That is relative to the base "share of GDP" which is 17.5%. In the year 2080, the share of GDP is presumed to have risen to 34%, and so the same amount of growth represents a smaller annual % increase—just 5.2%.

It is easier to grasp this if you look at the model cells.

Is the income multiplier constant or is it increasing as the population ages?

The income multiplier is constant. It is based on the historical relationship between per capita income and health spending.

Are the model and stats presented relevant to Canada?

The model is designed to project U.S. growth rates. It is possible that Canadian growth rates will be somewhat similar, but the entire health system is different, and Canadians are currently spending much less per capita and thus presumably would find it easier to expand spending by more in the coming decades. If one wanted to estimate Canadian medical cost liabilities, a Canada specific model would be justified. Note also, "health insurance" is a totally different product in Canada since the government covers the hospital and physician care—it is mostly a drug & ancillary coverage package.

Does the model account for extra disease burdens, e.g. cancer or renal patients?

No. The effects of morbidity and mortality from these burdens were explicitly excluded because, despite many comments that might seem to indicate otherwise, there is no evidence that national average health per capita medical spending or the annual rate of growth, is significantly affected by the amount of disease.

This point is so counter-intuitive, it is worth explaining. While the amount spent on any particular person depends mostly on whether or not they are sick, the amount spent across the U.S. depends upon overall budget decisions—not illness rates. People in Boston spend much more on medical care than those in Bangladesh because they have lots more money to spend (and expensive hospitals nearby), not because people in Boston are sicker (indeed, they are actually quite a bit healthier). We hear about how obesity, or medical errors, cost many billions and that eliminating them would save money and keep premiums down but it just does not work that way. If we found a 10 cent cure for HIV-AIDS tomorrow, then hospitals and doctors would just end up spending that saved money on treating some other disease.

So, turning toward the year 2050, it is logical that there will be much spending on healthcare, regardless of how healthy the average 95-year old turns out to be in that era.

Why is aging not included in the model?

The reason aging is not included is a subset of the above Q&A on disease. Aging affects personal health spending by increasing the rate of illness and disability but illness and disability have no proven effect on spending independent of budgetary factors.

How much of the assumed increase in health care as a % of GDP is due to aging of the U.S. population?

None. The micro aging effect is large, on the order of 5:1. The macro aging effect is close enough to zero to be negligible for most purposes.

What is the effect of globalization of health care; e.g., receiving care in India, for example in terms of the model? Is it implicitly part of the constraints? Perhaps there should be an offsetting factor for productivity improvement or competition?

Globalization was not explicitly factored in. It enters implicitly in two important ways

a. Competitiveness—manufacturing wages compared to countries with cheap NHI systems

b. Comparisons—inquiries about what the U.S. receives by spending 20–50% more of GDP than other developed countries.

The impact of globalization is expected to be modest for the following reasons:

1. Healthcare is intensely local. For instance, people won't drive from Wilmington, Delaware to Baltimore (Hopkins) for most procedures, although Hopkins is world renowned. Indeed, most patients patronize the neighborhood hospital even when clearly better alternatives are within 10 minutes. It would take a very large price differential to get people to move much business offshore.

2. It is a niche market. Medical tourism receives much press, but total volume is small. Even along the borders (Mexico, Canada) where it has had a long time to evolve, the impact on prices does not appear large (moves people, but not market price). There are certain services—sports and plastic surgery, radiology (because a scan can be read anywhere) where global competition could have a significant effect.

3. Related to point 2, if it does have an effect on radiology or plastic surgery, it is expected those savings will be used for other kinds of medical care, rather than reducing the overall trend. In view of the model, medical spending is above all a budgetary phenomenon, so the focus is on what will make that budget go up and down not how much disease there is.