Society of Actuaries Long Term Healthcare Trends Resource Model
Practical Issues for Actuaries
Prepared by Project Oversight Group Appointed for Development of the Model

This document was prepared by:
Kevin Binder, Project Oversight Group Chair
John Cookson
Marilyn Oliver
Adam Reese
Steven Siegel
Russell Weatherholtz
Keith Williams

Introduction

Actuaries who perform retiree medical valuations have a very long-term projection horizon. On a closed group valuation, the actuary will need to project the benefits for a young employee under age 25 for a period as long as 80 years. Unlike other long-term projections, such as pension payments where future benefit payments are discounted at the valuation interest rate making amounts payable more than 50 years into the future of very little value to the current valuation, the cost for retiree medical benefits payable in 50 years time may be 7 to 28 times larger than the current cost, depending on the assumed annual rate of increase in health care costs.

Healthcare costs have been rising faster than general inflation for many years. Early models that predicted this past pattern projected healthcare expenditure growth that continued to outpace total expenditure growth leading to the fallacious position that the whole of the US economy would ultimately be consumed by healthcare.

A more relevant model and analogy would be to look at the growth of the Chinese economy, which has outpaced the growth of the rest of the world economy for the past decade or so. Whereas the share of the total world GNP attributable to China has grown, no matter how much faster the Chinese economy grows relative to the rest of the world, the Chinese economy will always represent a portion of the total and can never grow to be 100 percent of the world economy.

Just as capacity restraints will affect the rate of growth of any one country, relative to the world economy, so too will healthcare capacity and resource constraints affect the share that the healthcare sector will be of the US economy.

The long term healthcare trends resource model that has been prepared for the Society of Actuaries by Professor Thomas Getzen includes capacity constraints to ensure the long-term projection is rational. In the initially distributed version of the model, the focus is on the projection of healthcare costs from 2012 and onward. Future versions of the model will update the start of the projection timeframe. The particular constraints employed in the model represent one of a number of valid methods for modeling future healthcare

costs. As such, the chosen constraints in the model are neither intended nor should be construed to be the only valid methodology for projecting future healthcare costs. Furthermore, we may not be able to describe exactly what year and in what fashion those constraints will occur, however we are able to show how those constraints in the model will affect long-term healthcare trends.

This document addresses practical issues for the actuary to consider when using the model. Issues discussed include the relationship of the short term trend rates to long term projected rates, characteristics of the prescribed *substantive* plan to be valued, and special cases that may require model adjustment. As well, examples of sample report language are provided. The intention of this document is to guide the actuary in the appropriate use of the model. It is also strongly suggested that users read all accompanying model documentation prepared by Professor Thomas Getzen, creator of the model. However, it should be recognized that no guide or documentation can replace the ultimate judgment that should be exercised by the actuary to ensure the appropriateness of model results for a given application.

Relationship of Short Term Rates versus Projected Long Term Rates

The model contains short-term trend rates input by the user and long term trend rates generated by the model. The long term trend rates that can be influenced by the aggregate capacity constraints referenced previously. The short term rates (those prior to 2011 in the initially distributed version of the model; this timeframe will change in updated versions of the model) are selected by the user based on anticipated experience for the plan being valued, as opposed to the entire US economy. For the calculation of long term projected rates, one of the main drivers is the percent share of GDP represented by healthcare for 2011 (again the timeframe applies to the initially distributed version of the model), which is input by the user.

From a purely formulaic standpoint, the short term rates input by the user do not numerically impact the long term rates projected by the model. However, for consistent results the user should review the relationship between the selected short term trend rates and the inputted percent share of GDP represented by healthcare in 2011.

Characteristics of the *Substantive* Plan

A primary use of the model is anticipated to be support for the valuation of what is known as the *substantive* plan prescribed by applicable accounting standards.

Because of the potential for leveraging employer costs, the selection of long term trend assumptions may be affected by whether items such as medical plan deductibles, co-pays, and out-of-pocket limitations are assumed to increase in the future. Generally the current plan (i.e. the plan as written) will be silent in this area and so assumptions must be made.

- For purposes other than accounting (such as budgeting, determination of funding levels, and costing potential plan changes) assumptions regarding future increases in these items are primarily determined in a manner consistent with the objective of those efforts.

- For accounting purposes, the provisions of what is defined as the "substantive" plan in Statement of Financial Accounting Standards No. 106 (for private employers) and Statements No. 43 and 45 of the Governmental Accounting Standards Board (for plans and state and local governmental employers respectively) are used.

Accounting Standards
The substantive plan is the plan as understood by the employer and plan members.

The substantive plan may be the plan as written or it may be the plan as modified to reflect the employer's policy regarding cost-sharing with plan members as evidenced by other factors.

FAS 106 directly addresses the inclusion in the substantive plan of future changes in deductibles, coinsurance, and out-of-pocket limitations. Factors such as:

- Past practice
- Communication to plan participants of future changes in cost-sharing provisions, and
- Offsetting changes in other benefits and compensation

are considered.

GASB 43 and 45 are less explicit and do not specifically reference deductibles, coinsurance, and out-of-pocket limitations. However, the following are to be taken into account in determining benefits to be valued as part of the substantive plan:

- "An established pattern of practice with regard to the sharing of benefit costs between the employer and plan members"
- Communications between the employer and plan members.

It should be noted that:

1. If included in the substantive plan, increases in deductibles, co-pays, and out-of-pocket limitations may be greater or less than trend.
2. The level of anticipated future changes in these items is not limited to plans where employers pay a percentage of actual premiums, but also impacts plans with fixed dollar amounts and caps if, either by provisions of the written plan or by inclusion of future increases in the substantive plan, these increases are linked to premium levels.

Examples of Intended Use of the Model
The model assumes, for the health benefit plans to be valued, that the plan administrators and fiduciaries (employer, union, etc.) can amend the plans for both employees and retirees. It further assumes that the plan administrators and fiduciaries will implement incremental future changes to the health benefits provided in approximately the same magnitude as plan changes experienced throughout the general U.S. healthcare market.

Some examples of appropriate application of the model include:

- Employers that provide the same medical benefit plan (coordinated with Medicare for age 65 or older retirees) to their retirees as employees.
- Employers with no legal restrictions or other constraints that would prohibit amending the retiree medical plan.
- Collective bargaining situations where appropriate plan changes can be reasonably anticipated.

Special Cases That May Require Adjustment to the Model
No one model can be used for all conceivable situations. Listed below are several situations that may require modification in the standard input and/results of the model. This list is not intended to be exhaustive and the actuary should consider other situations that may warrant model adjustment in addition to those listed.

1. Restraints on Changing the Underlying Plan
In some cases there are groups of current or future retirees for whom employers are legally precluded from changing the underlying medical plan. Such constraints may be the result of class action lawsuits or other litigation. As well, promises to not change the retiree medical agreement may be the result of bankruptcy or executive negotiation. In such cases the employer will not have the ability to make incremental future changes to the health benefit plan. Accordingly, it is recommended that the model be adjusted so that the model's assumed constraints to overall future health care cost growth in the U.S. economy are significantly reduced or even eliminated.

2. Changes Implemented to the Underlying Plan Either Significantly Lag or Precede Healthcare Changes in the Overall US Economy.
Certain plans may not follow the general changes that are implemented in healthcare throughout the US from a timing perspective. For instance, some plans may have long duration guarantees that cause desired benefit changes to significantly lag those experienced throughout the healthcare market. Alternatively, other plans may have undergone excessive benefit changes that would be considered leading edge and not generally embraced in the healthcare market. In such special situations, the results of the model should be adjusted and considered for their appropriateness.

3. Legislative Change
Significant regional or national legislation could impact future trends in medical spending. Similar to how the model anticipates that employers will incrementally modify their medical benefit plans, moderate legislative change is already anticipated by the current model. However, sweeping legislation is not anticipated by the model and may require adjustment. Examples are, on the national level, a major overhaul of the national medical malpractice system, and on the state level, a requirement that all employers provide health insurance. Either of these situations could warrant model adjustments.

Sample Report Language for Model
The following are two samples for suggested report language for model results.

Sample#1

Health Care Trend Rate:
Medical Costs are assumed to increase each year according to the following schedule:

Year	Medical Trend
2007	Input by User
2008	Input by User
2009	Input by User
2010	Input by User
2011	Input by User
2012	7.2%
2013	7.2
2014	7.1
2015	7.1
2020	6.9
2025	6.8
2030	6.7
2040	6.2
2050	5.9
2060	5.8
2070	5.7
2080+	5.2

The above trend rates were developed using the baseline projection of the SOA Long-Run Medical Cost Trend Model. The following assumptions were used as input variables into this model:

Rate of Inflation	3.2%
Rate of Growth in Real Income / GDP per capita	1.9%
Income Multiplier for Health Spending	1.4
Extra Trend due to Technology and other factors	1.2%
Health Share of GDP Resistance Point	25.0%
Year for Limiting Cost Growth to GDP Growth	2075

The SOA Long-Run Medical Cost Trend Model and its baseline projection are based on an econometric analysis of historical US medical expenditures and the judgments of experts in the field. The long-run baseline projection and input variables have been developed under the guidance of an SOA Project Oversight Group. The above schedule represents a reasonable medical trend projection for the current plan provisions and demographics of the Company Retiree Welfare Benefits Plan, and no changes to these baseline assumptions are necessary.

Sample #2

Health Care Trend Rate:

Medical Costs are assumed to increase each year according to the following schedule:

Year	Medical Trend
2007	Input by User
2008	Input by User
2009	Input by User
2010	Input by User
2011	Input by User
2012	6.6%
2013	6.6
2014	6.6
2015	6.5
2020	6.4
2025	6.3
2030	6.2
2040	5.7
2050	5.5
2060	5.3
2070	5.2
2080+	4.8

The above trend rates were developed using the SOA Long-Run Medical Cost Trend Model. The following assumptions were used as input variables into this model:

Rate of Inflation	3.2%
Rate of Growth in Real Income / GDP per capita	1.5%
Income Multiplier for Health Spending	1.4
Extra Trend due to Technology and other factors	1.2%
Health Share of GDP Resistance Point	25.0%
Year for Limiting Cost Growth to GDP Growth	2075

The SOA Long-Run Medical Cost Trend Model and its baseline projection are based on an econometric analysis of historical US medical expenditures and the judgments of experts in the field. The long-run baseline projection and input variables have been developed under the guidance of an SOA Project Oversight Group. Based on the current plan provisions and demographics of the Company Retiree Welfare Benefits Plan, we expect trends to be lower in the long-term than the trends produced by the model's baseline assumptions. We have modified the SOA POG baseline assumption for the long-term Rate of Growth in Real Income from 1.9% to 1.5%.