Choice of Assumptions – General Sources

• There are different sources for assumptions.
  • Some are completely discretionary and chosen by the actuary
  • Some are prescribed by a government or other than the actuary
  • Some are chosen by the actuary from a list of prescribed assumptions

Choice of Assumptions – General Purposes

• There are different purposes for which assumptions are chosen, such as:
  • Minimum funding contributions, IRC section 430
  • Maximum deductible contributions, IRC section 404
  • Recommended contributions
  • FASB
Choice of Assumptions – General Nonsense

• There's a lot of what Norm would call “nonsense” out there

Choice of Assumptions – General Nonsense

• The discussion today about assumption setting is not meant to say that an enrolled actuary MUST follow our advice with respect to setting every assumption.

Choice of Assumptions – General Nonsense

• We are simply restarting a conversation about what should be considered or can be considered …

• and it is up to you whether or not any suggestions are appropriate for any particular plan for which you are responsible.
Choice of Assumptions – General Nonsense

• We have worked on so many pension plans that, most of the time, our experience leads us to be able to make assumption choices quickly, but that doesn’t mean we don’t consider the alternatives.

Choice of Assumptions – General Wisdom

• “a prudent actuary must arrive at assumptions which will ensure that the promised benefits will be available” – Judge Clapp in Citrus Valley Estates, Inc. et al v. Commissioner

• If the promised benefits aren’t available when needed, despite a plan sponsor’s willingness to fund those benefits, the actuary hasn’t done his job even if each and every assumption was reasonable.
Choice of Assumptions – General Wisdom

• “The job of an actuary is to ‘cost’ the benefits” – Larry Deutsch

• How can you fund a benefit if you don’t know what it’s worth?

Choice of Assumptions – General Wisdom

• An actuary is “that professional who is trained in evaluating the current financial implications of future contingent events.” – Fred Kilbourne
Choice of Assumptions – General Wisdom

• An actuary is “that professional who is trained in evaluating the current financial implications of future contingent events.” – Fred Kilbourne

• This is NOT the same as predicting future contingent events.
• We don’t predict; we help employers evaluate and plan for the financial implications of future contingent events.

Assumptions List – Today’s Menu

• Interest rates – investment return, discount rates, crediting rate
• Mortality and Mortality Improvement
• Disability and Disability Recovery
• Rates of Retirement/In-Service Distributions
• Form of benefit
• Compensation Increase
• Marriage, Divorce, Remarriage

Interest rates – Segment Rates

• IRC Sections 430, 404
  • You might think this is not a responsible assumption choice, but it is.
  • When a plan is adopted, the plan sponsor usually elects which segment rates to use or alternatively to use the full yield curve and which full yield curve to use.
  • The actuary should be the one recommending that choice since few plan sponsors are qualified to make that choice without advice.
  • This is also true of the employer choices made in valuation date, etc.
Interest rates – Segment Rates

• IRC sections 430, 404
  • Since there’s rarely much of a difference between the choices available, one could simply always have your clients elect the same month, e.g. the third month before the valuation date.
  • Or, so as to minimize the first year’s required contribution, one could choose the month that has the highest segment rates.
  • Or, so as to maximize the first year’s deductible contribution, one could choose the month that has the lowest segment rates.

Recommended Contributions

As the 9th Circuit wrote in the appeal of Citrus Valley:
• First and foremost, plan funding decisions and methods must be reasonable in the aggregate;
• In addition, they must represent the actuary’s professional judgement;
• Finally, plan actuaries must live up to national professional, ethical, and technical standards.
Recommended Contributions

• How can an enrolled actuary come up with a recommended contribution or a recommended range?

Recommended Contributions

• One could just tell the client what the minimum required contribution is under IRC section 430.

Recommended Contributions

• One could just tell the client what the minimum required contribution is under IRC section 430

• Or one could just tell the client the minimum/maximum range
Recommended Contributions

• One could just tell the client what the minimum required contribution is under IRC section 430
• Or one could just tell the client the minimum/maximum range
• Or one could also tell the client the difference between the value of accrued benefits and the value of assets

Recommended Contributions

• If the recommendation, when coupled with the facts and circumstances of the client and other communications, communicates to the plan sponsor a recommended pattern of contributions that could ensure the promised benefits will be funded, then the actuary may have fulfilled his professional responsibility.

Recommended Contributions

• For example, if the funding pattern for a one-man plan is to “top off” the assets at the maximum amount that can be paid as a lump sum under IRC section 415 so as to avoid excess assets that might be subject to a 50% excise tax, that sounds reasonable based on the particular facts and circumstances.
• Namely it can be argued that this would be a reasonable funding pattern for this particular plan and plan sponsor.
Recommended Contributions

• On the other hand, especially when the facts and circumstances and contribution goals of the employer are not quite as straightforward, perhaps a bit more perspective could help your recommendation be more ...
• Professional.

Recommended Contributions – Old Style

• Even though certain old style funding methods are only required for multi-employer plans, every valuation system I know of will calculate normal costs, etc. for the Pre-PPA '06 funding methods and allow the actuary to choose the funding method and assumptions without much additional effort by the actuary.

Recommended Contributions – Old Style

• The problem with the PPA '06 method, as with the unit credit method, is that the target normal cost is designed to be an increasing amount each year and that may or may not be a desirable funding pattern.
• Cash balance plan funding patterns can be somewhat different.
Recommended Contributions – Old Style

- Cash balance plan funding patterns can be increasing as well.
- Even with flat dollar contributions, actuarial losses can create an increasing funding pattern.

Recommended Contributions – Old Style

- It may, or may not, be useful to see what a more level pattern of contributions might be using:
  - Individual Aggregate, for example; and
  - Your choice of assumptions rather than the prescribed assumptions.

Recommended Contributions – Old Style

- The guidance for choosing assumptions for recommended contributions follows, in general, what Judge Clapp described but should also consider the more specific guidance in the ASOPs as recommended by the 9th Circuit, namely:
  - Using “national professional, ethical, and technical standards.”
Interest Rates – Recommended Contributions

• ASOP 27 advises that the actuary, in developing a reasonable assumption for the investment return, should review appropriate investment data.

• “These data may include the following:
  • Current yields to maturity of fixed income securities such as government securities and corporate bonds;
  • Forecasts of inflation, GDP growth, and total returns for each asset class;
  • Historical and current investment data including, but not limited to, real and nominal returns, the inflation and inflation risk components implicit in the yield of inflation-protected securities, dividend yields, earnings yields, and real estate capitalization rates; and
  • Historical plan performance.”

• You could also view the choice of interest rate from the viewpoint of choosing a Discount Rate which is “used to calculate the present value of expected future plan payments.”
  • “The actuary should consider the purpose of the measurement as a primary factor in selecting a discount rate.”
Interest Rates – Recommended Contributions

• Some examples are:

  • Contribution budgeting:
    • "The actuary may use a discount rate that reflects the anticipated investment return from the pension fund. Alternatively, the actuary may use a discount rate appropriate for defeasance, settlement or market-consistent measurements."

Interest Rates – Recommended Contributions

"The actuary may use a discount rate that reflects the anticipated investment return from the pension fund."

If the plan is invested in a money market fund, assuming a 7% return on investment seems a bit high.

Interest Rates – Recommended Contributions

• Defeasance (extinguishment of debt) or Settlement:
  • "An actuary measuring a plan's present value of benefits on a defeasance or settlement basis may use a discount rate implicit in annuity prices" or other such option.
  • This may mean the consideration of the possibility of major plan liabilities being due immediately due to plan termination, the death or retirement of the business owner, etc."
Interest Rates – Recommended Contributions

• Defeasance (extinguishment of debt) or Settlement:
  • Taking plan termination risk into account in the recommendation of a contribution or range is not the same as “assuming plan termination” and is not wrong.
  • Just as it is not wrong to take into account a freight train hurtling toward you, a small plan termination is inevitable.

Interest Rates – Recommended Contributions

• Market-Consistent Measurements:
  • An actuary making a market-consistent measurement may use a discount rate implicit in the price at which benefits that are expected to be paid in the future would trade in an open market between a knowledgeable seller and a knowledgeable buyer. In some instances, that discount rate may be approximated by market yields for a hypothetical bond portfolio whose cash flows reasonably match the pattern of benefits expected to be paid in the future. The type and quality of bonds in the hypothetical portfolio may depend on the particular type of market-consistent measurement.

Interest Rates – Recommended Contributions

• Market-Consistent Measurements:
  • One example of this type of measurement is the use of segment rates in general;
  • Another example is when liabilities are “immunized” by matching a liability stream with an income stream.
Interest Rates – Recommended Contributions

• Market-Consistent Measurements:
  • A third example would be cost of purchasing annuities or liabilities measured on a PBGC trusteeship takeover.

"The present value of expected future pension payments may be calculated from the perspective of different parties, recognizing that different parties may have different measurement purposes."

A good example of a different perspective is the PBGC variable rate premium calculation for liabilities.
Interest Rates – Recommended Contributions

• Given these choices, it’s very easy to choose a methodology that can support any narrative a client wants.
• Or a professional will use the opportunity to choose a methodology that can lead to paying benefits when due.

Interest Rates – Recommended Contributions

• Since your job isn’t to predict but, rather, to evaluate, pick something reasonable and refine it with future valuations so that you feel comfortable to recommend a contribution amount or range.

Mortality Tables – Recommended Contributions

• For most small plans, the choice of mortality table is the mortality the IRS will prescribe for purposes of minimum lump sums under IRC section 417(e) and maximum lump sums under IRC section 415 because the assumption will be that participants will take lump sums.
Mortality Tables – Recommended Contributions

- The IRS publishes new tables each year.
- There is not always mortality improvement in the new table.
- It may be the right decision as well as the easy decision, but is it also reasonable to assume some mortality improvement?

The IRS has informally communicated that they will continue to issue static tables for IRC section 417(e) because otherwise there might be an age discrimination issue.

Still, if the plan is going to provide for or buy life annuities, then the annuity mortality assumptions used by the insurance companies are important to understand and follow.
Mortality Tables – Recommended Contributions

• A suggestion for estimating insurance company annuity premiums without using the same tables they use might be to use:
  • Expense loads for mortality improvement and/or
  • A lower than market interest rate.
• If when you compare your estimate with actual market insurance annuity rates and you are close, then maybe that’s good enough.

Disability and Disability Recovery

• I don’t have any plan where those assumptions might apply ... any more.
• But others do, for example police and fire union plans usually have a subsidized disability benefit that is used extensively and assumptions for such must be considered and reviewed as appropriate.
• From what I’ve heard, the disability benefit may be the most commonly used benefit under those plans.

Disability and Disability Recovery

• Some small plans might have a subsidized disability benefit, and when there are facts and circumstances indicating such disability benefits might be elected, the actuary should consider the situation.
Disability and Disability Recovery

- "Subsidized disability benefits" might include a tax-free treatment but note that there have been a series of court cases limiting (or most likely eliminating) that favorable tax treatment.
- The tax treatment of such disability payments is definitely an "ERISA attorney" matter but the funding assumption as to disability commencement and benefits is yours.

Rates of Retirement/In-Service Distributions

- Assumptions as to WHEN a benefit may be paid, and the likelihood at particular ages, is an assumption that might not be considered sufficiently but needs to be.

Rates of Retirement/In-Service Distributions

- We'd say that for many small plans, while the ability to refine this assumption is limited by the small experience in population size, it should still be considered because future experience may be different.
Rates of Retirement/In-Service Distributions

• Most actuaries assume the benefit due from a small plan will be paid at Normal Retirement Age for funding purposes.

• The odds are that the benefit will be paid at a different age, but for funding purposes, if the funding is reasonable using that assumption, then that may be the most appropriate assumption.

Rates of Retirement/In-Service Distributions

• For example, in a one-man plan, the participant is only going to retire at one age and picking that one age is a speculative assumption.

• With in-service distributions available at a certain plan document provided age, say 62 (now can be as low as 59-1/2), it’s possible the participant will take partial lump sum distributions at a series of ages.

Rates of Retirement/In-Service Distributions

• Some small plans also have a subsidized early retirement benefit.

• It would be unreasonable to ignore that subsidy.

• The IRS has a Revenue Ruling from the 80’s saying so.

• Judge Clapp said the same thing.
Rates of Retirement/In-Service Distributions

• As we mentioned, in addition to distributions available at Normal Retirement Age or Early Retirement Age, the law allows a plan to offer in-service distributions as early as age 62.
• The SECURE Act lowers that to age 59-1/2.

Rates of Retirement/In-Service Distributions

• The availability of in-service lump sum distributions creates a potential that a participant might actually take some or all of his benefit at that age, and so that contingency should be considered.

Rates of Retirement/In-Service Distributions

• As Judge Clapp put it, “when the terms reasonably provide that a participant is entitled to full benefits at a particular age, a prudent actuary must arrive at assumptions which will ensure that the promised benefits will be available.” (emphasis added)
Rates of Retirement/In-Service Distributions

• Judge Clapp said that the exclusive professional judgement of the enrolled actuary to choose a reasonable assumption as to the choice of assumed distribution age, unless the assumption is “substantially unreasonable” (Judge Clapp's words), cannot be challenged by the IRS.

Rates of Retirement/In-Service Distributions

• Having served on the ABCD, my experience is that the ABCD has had difficulty challenging actuarial assumptions and may continue to be restrained in trying to second guess the enrolled actuary.

Rates of Retirement/In-Service Distributions

• To what extent a court in civil litigation might decide to second guess an actuary is not clear, but decades ago a well respected actuarial firm under estimated the uncapped inflation assumption in public plans and the sponsors of the underfunded plans sued.
• What the new lawsuit frontier might be can only be imagined in our worst nightmares.
Rates of Retirement/In-Service Distributions

- Let’s not ignore Deferred Retirement assumptions

- There is a real contingency that a participant might defer retirement, especially if there is an incentive or good reason to do so.

Rates of Retirement/In-Service Distributions

- For example, a business owner might provide written intention that he wants set up a plan at age 61 to retire at age 70.
  - We see no problem with using the NRA for the funding and then deferring the retirement year by year after the NRA
  - We also see no problem with assuming from the beginning that the actual retirement age will be age 70, as long as the caution about the ability of the participant to change his mind and take his benefit sooner is considered.

Rates of Retirement/In-Service Distributions

- Don’t forget the deferred retirement benefit might be increased actuarially.
  - We’ve seen examples where the assumption was that the normal retirement benefit without increase would be the payment at, say, age 70, mostly because the actuary misunderstood the plan provisions.
  - Of course you can’t assume delay past the Required Beginning Date.
Rates of Retirement/In-Service Distributions

• There’s also a big problem that it is illegal to assume a participant will elect to forfeit part of his benefit.
• People make decisions against what we might see as their financial interest many times, but it’s not necessarily something to assume.

Rates of Retirement/In-Service Distributions

• For example, it’s possible for a rank-and-file employee to pass on taking a subsidized early retirement benefit because he likes his paycheck from this employer and might not earn as much elsewhere.
• Rank-and-file employees have been known to be smart and make wise choices, too.

Rates of Retirement/In-Service Distributions

• Spouses of business owners might very well retire at a younger age than the business owner.
• My spouse certainly did.
• This means that if the NRA is 62 and the subsidized ERA is 55, the spouse might very well take his or her benefit at 55 by actually retiring even if the business owner doesn’t retire until age 62.
And, as Judge Clapp ruled, the business owner might be planning to retire early as well.

Judge Clapp rejected the assertion by the IRS that the stated intention to retire early was just "self serving".

Calling what the business owner says he wants to do as "self serving" is mind reading and is itself self serving.

To sum up, the choice of the age of assumed retirement may be the most important assumption the actuary makes.

If your valuation system allows for rates of retirement to be used in the valuation, then it's easier to use rates of retirement.

A balance should be struck between refinement and materiality.
Form of benefit

- ASOP 35 says:
- The actuary should take into account factors such as:
  - "The benefit forms and benefit commencement dates available under the plan being valued;"
  - "The historical or expected experience of elections under the plan being valued and similar plans; and"
  - "The degree to which particular benefit forms may be subsidized."

Consider the last, first, i.e. "subsidized".

There's the obvious problem that in today's World, the life annuity is more valuable than the lump sum not because we WANT the life annuity to be more valuable but because the low interest rate environment has upended the concept of a subsidized lump sum.

Despite the inverted subsidy, a high percentage of participants when offered a lump sum form of benefit has chosen that form rather than the more valuable life annuity form.

At least those participants paid from small plans.
Form of benefit

• Oddly, even though business owners usually understand the value of future payments better than their employees, the odds of a rank-and-file participant choosing a life annuity, through election or through a refusal to make an election at plan termination, may be higher than the business owner doing so.
• That’s just my experience because few business owners want to hand over so much money to an insurance company to control even if to do so makes financial sense.

Form of benefit

• The lump sum form of benefit, which can be rolled over, has become an emotional decision rather than a financial one.
• Emotions can change.

Form of benefit

• Oddly, it appears that because a traditional defined benefit pension plan has the 417(e) minimum lump sum, the value difference between the lump sum and the value of a life annuity might actually be wider in a cash balance plan that uses 5%-6%.
Form of benefit

• In a traditional defined benefit pension plan, the lump sum benefits, at least those not limited by IRC section 415’s interest rate of 5-1/2%, are being calculated with segment rates which are all less than 4%.

Form of benefit

• In a cash balance plan, the plan’s lump sum interest rate tends to be between 4% to 6%.

Form of benefit

• In those cases, usually, the difference between the value of lump sum benefits and the cost of buying life annuities is greater for a cash balance plan than a traditional defined benefit pension plan.
• Hence, more potential annuity risk for a cash balance plan.
Form of benefit

• Section 404 segment rates provide a more accurate measurement of the actual status than the 430 segment rates.

Form of benefit

• Since the liabilities under the variable rate premium are usually larger than the value of accrued benefits, and there’s a current financial consequence to paying the variable rate premium, some plan sponsors have decided to better fund their plans.
• An intended consequence.

Form of benefit

• As far as “historical experience”...
• Over the years I have had business owners in exactly three plans choose a subsidized QJSA over the lump sum and, of course, the value difference was significant.
Form of benefit

• It might be reasonable for an actuary to take into account the probability of a more subsidized form of benefit than the lump sum.

Form of benefit

• The actuary is required to choose rates of benefit form election.
• It is interesting sometimes to play with to see how the funding pattern might vary based on contingencies of the election of form of benefit.

Form of benefit in another plan

• For those attendees who were in my session a year ago about aggregating Entertainment Guild plans with “loan-out” plans, there is also the assumption, when aggregating, as to what form of benefit to assume will be paid from the Guild pension plan and, of course, at what age it will be paid.
• This would be true of any plan that has benefits offset by benefits from another pension plan.
Form of benefit in another plan

• The reason is that since the Guild pension plans almost always are paid as some form of life annuity and, if the form paid is a joint and 100% survivor life annuity, the monthly benefit paid from the Guild plan and aggregated with the loan-out plan will be smaller than that which would have been paid as a straight life annuity, thus allowing for a larger benefit to be paid from the loan-out plan under IRC section 415.

Form of benefit in another plan

• A possible reason to not assume a joint and 100% survivor life annuity will be paid from the Guild pension plan is that even if the business owner, we'll call him "The Talent", is married right now, that is no guarantee that will continue into the future upsetting the benefit form assumption.

Form of benefit in another plan

• Of course The Talent might remarry.
  • He frequently does.
Form of benefit in another plan

• Coordination of the benefit form actually selected is more of a tax consulting issue than a funding assumption issue.
• I don’t ever remember making a funding assumption for the loan-out plan wrt form of benefit, just wrt retirement age.

Form of benefit in another plan

• To summarize this section, the usual assumption of “lump sum for all” is going to be under stress in the future should interest rates used by insurance companies and the PBGC for pricing life annuities continue to be at historical lows.

Compensation Increase

• Even under IRC section 430, if the valuation date is the beginning of the plan year, an assumption for compensation increases for the upcoming year should be considered.
• Even though it might not be applicable under 430, it might be applicable for other reasons.
Compensation Increase

• For many small plans, that assumption could reasonably be 0% for the business owner because the compensation for business owners usually fluctuates and the compensations for the rank and file might have as much affect on the funding of the plan as a minor moon on Saturn has on the orbit of Jupiter.
• Again, balancing refinement versus materiality might mean using the less refined assumption.

Compensation Increase

• A compensation increase assumption could also apply to cash balance plans unless the contribution is a flat dollar amount.
• Flat dollar benefits/cash balance contributions do simplify things.

Compensation Increase

• For IRC section 404 purposes, an assumption with respect to compensation increases should be considered.
• Again, 0% might be a reasonable choice, especially when the cushion is large enough.
• The larger the plan, the less reasonable 0% might look.
Compensation Increase

• For FASB purposes, the PBO definitely requires a compensation increase assumption provided future benefit increases are a function that includes compensation as a input.
• Richard Kutikoff will speak more about this in his session.

Compensation Increase

• When we use the term "compensation increase", we don’t necessarily mean a certain percentage increase that is the same for each participant.

Compensation Increase

• As ASOP 27 puts it:
  • “Generally, a participant’s compensation will increase over the long term in accordance with inflation, productivity growth, and merit adjustments.”
Compensation Increase

• Criteria could include:
  • The plan sponsor’s practice and anticipated changes in practice
  • Current compensation distributions by age or service
  • Historical practices of the employer or the industry
  • Historical national wage increases and productivity growth

Compensation Increase

• The plan sponsor’s practice and anticipated changes in practice
  • The larger an employer is, the more likely the employer will have official stated compensation increase practices.
  • The employer probably also has a budget into which the compensation increase practice must fit.

Compensation Increase

• Current compensation distributions by age or service
  • For example, younger and lower service employees tend to have larger increases as a percentage of pay:
    • partly because the compensation starts so low, and
    • new, young employees become more valuable as they gain experience.
Compensation Increase

• Historical practices of the employer or the industry
  • For example, law firms might look to industry practices as to how to pay associates.
  • When I worked at an insurance company, it looked at compensation practices in the insurance industry.

Compensation Increase

• Historical national wage increases and productivity growth
  • This could be useful in backward estimations of compensation history in a PIA offset plan.

Compensation Increase

• Since the 1980's, the use of a fixed percentage assumption for everyone has been a useful approximation that has been accepted as a funding assumption, with the inflation portion overwhelming the other criteria.
  • However, with low inflation and low interest rates not disappearing for the short term, in the proper circumstances consideration of more nuanced assumptions might be in order.
Compensation Increase

• An easy first try might be to use a fixed percentage or one of the "S" tables (S-3, S-5, etc.) as an approximation and see how the experience pans out.
• After all, we are not trying to predict future compensation increases, just choosing an assumption that will help "ensure that the promised benefits will be available."

Marriage, Divorce, Remarriage

• We've already mentioned the assumption of marriage with respect to the form of benefit from entertainment guild plans, but there are other possibilities as well.

Marriage, Divorce, Remarriage

• While for most small plans the QJSA and other JSA are the actuarial equivalent of the straight life annuity, with the way life annuities are priced the age of the spouse might make the QJSA more or less valuable in insurance company pricing and in PBGC pricing at plan termination.
• If the QJSA is subsidized, and the participant is at the 415 limit, there would be a huge increase in value for the QJSA over the lump sum.
Marriage, Divorce, Remarriage

• At this point in time, we think this is something we just need to keep an eye on except for the special circumstances of Guild aggregation.
• At least for a very simple block of plans.
• Whether the time spent is worthwhile is up to the actuary.

Summation

• There are many actuarial assumptions.

Summation

• Some are irrelevant for small plans.
Summation

• Some are important for small plans.

Summation

• Experience allows an actuary to decide which are important and which are not and how to judge.

Thank you!