Full Circle:

Purchasing Insured Annuities in a Defined-Benefit Plan

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Abstract

Historically, pension-plan sponsors have moved away from purchasing insured annuity products which protect against financial and longevity risks. Instead, pension-plan sponsors are managing their assets and exposing the plan and the participants to these risks. The investment risk in particular has been masked from investors and participants because of complicated accounting rules. However, transparent accounting seems imminent. It has already been adopted in the United Kingdom, and there are changes to the international and U.S. standards currently in discussion. With these changes in accounting rules, plan sponsors will be showing the risk of self-insuring their plans to shareholders and other parties. This may make self-insurance less attractive.

This paper will first describe why self-insurance is less attractive with transparent-accounting rules. The changes in the accounting rules in the United Kingdom and the impact of the rules on pension plans will serve as an example.

Then the paper will describe two main strategies an employer can execute to reduce the plan's and the plan participant's risks.

The first strategy is changing the plan's asset allocation. Topics will include moving more assets into bonds and matching assets with liability durations.

The second strategy is annuity purchases. When are they appropriate? What are the benefits? Topics will include annuity purchases to cover current inactive benefits, periodic purchases of annuities as individuals retire and purchasing annuities for individuals (especially small plans).

1. Decades Ago, There Was a Movement To Reach for Higher Returns

In the 1920s, insurance contracts became a popular method for funding pension benefits. The first product offered was the group-deferred-annuity contract, which funded benefits through the purchase of single-premium-

deferred annuities (SPDAs). This practice transferred longevity and investment risk to insurance companies. Over time, the deposit-administration contract, immediate-participation-guarantee contract and the guaranteed-investment contract (GIC) were developed to meet the changing needs of plan sponsors. Most of these products transferred only investment risk to the insurance company.

Today, along with the structured products offered, individualized insurance contracts can also be designed to meet the specific needs of a plan sponsor. However, their popularity has declined. In part, this is because employers believe that they can obtain a risk premium by investing pension assets in equities for the long term. Employers are willing to take on this investment risk for the flexibility and investment alternatives of investing in a trust. Consequently, other than PBGC insurance, most plans are completely self-insured and are exposed to investment, longevity and other risks.

2. History of Pension Accounting in the United States

Recently, the calculation of pension expense for defined-benefit pension plans has come under increasing criticism. The main criticism is that expense calculation methods are not transparent and do not reflect the financial economics of pension obligations in a timely manner. This problem stems from current pension accounting rules.

Actuarial cost methods were originally developed to help employers construct a funding policy that provided controllable and stable contributions. Smoothing and amortization techniques were used to dampen volatility. The first pension accounting standard, Accounting Principles Board Statement 8 (APB 8), basically set pension expense equal to plan contributions. Therefore, pension expense, like contributions, was controllable and stable. At that time, pension-plan costs were small compared to the cost of other operations of most companies. Therefore, there was little concern that the methods used to produce controllable and stable contributions also resulted in controllable and stable pension accounting costs.

As time passed, pension-plan costs grew as a percentage of operating costs, and expense calculations, under APB 8, made intercompany comparisons

difficult. As a result, the Financial Accounting Standards Board (FASB) promulgated Statement of Financial Accounting Standards No. 87 (FAS 87).

FAS 87 requires that pension liabilities be calculated using a single-standard-actuarial-cost method, and that current bond rates be used to mark the liabilities to better reflect the market. However, smoothing asset volatility and deferring and amortizing unexpected changes in liabilities are still allowed. A plan's funded status is disclosed under FAS 87 (in the footnotes), but only recognized on the balance sheet as a minimum liability for underfunded plans.

Today, new transparent-accounting rules are being discussed in the United States that will highlight, in particular, any asset/liability mismatch to shareholders. Also, there is the potential for revised funding rules. It is likely that these new accounting and funding rules will produce larger and more volatile expense and contributions. This may lead to shareholders questioning the risks being taken on by the plan sponsor that, in turn, may lead plan sponsors to seek ways to stabilize their pension expense and contributions.

3. Effects of Changes

Under FAS 87, certain components of pension expense are smoothed and amortized. Some of the techniques include smoothing of asset gains and losses in the market-related value of assets, not recognizing any gains or losses within 10 percent of the greater of the market-related assets and the accounting liability, and amortizing gains and losses and plan and assumption changes over a measure of average future service. These techniques mask annual volatility from shareholders and other parties.

If more transparent accounting is adopted, these smoothing and amortization techniques will no longer be permitted. Therefore, the annual volatility in pension expense will increase.

Graph 1 below compares the volatility of pension expense under FAS 87, including permitted amortization and deferral, to the volatility under transparent pension accounting. A capital market simulator was used to stochastically generate asset and liability results, which were then used to

calculate expense. The summary of the plan provisions and assumptions are in Appendix 1. The capital market assumptions are in Appendix 2. It is evident that the smoothing options permitted under FAS 87 remove the majority of expense volatility.

Graph 1

Expense Options

☐ 0th - 5th	☐ 5th - 25th	☐ 25th - 50th	☐ 50th - 75th	☐ 75th - 95th	☐ 95th - 100th
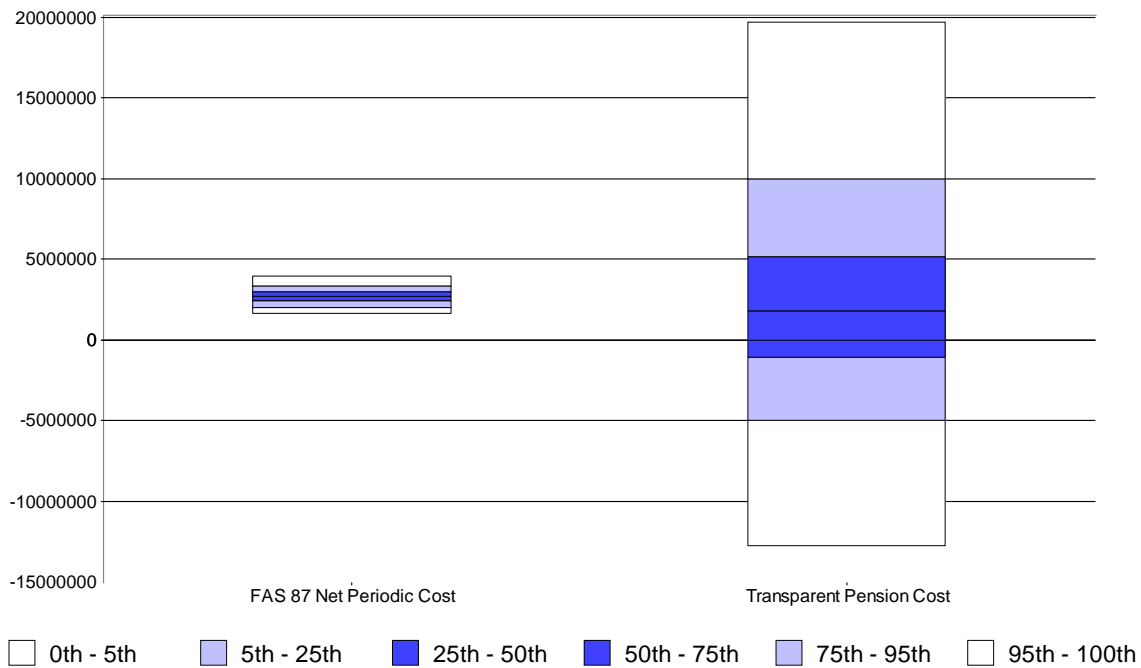
4. Both U.S. and U.K. Companies Are Taking Action, with the United Kingdom Leading the Way

A multinational study sponsored by SEI Investments in May 2003 found that, due to the prolonged bear market, many companies' corporate finances have been negatively impacted by the funded status of their pension plans. The impacts include lower profitability, cash-flow problems and reduced credit ratings and share price. The study found that 90 percent of companies (of 151 sampled) were taking at least one action to address the pension impact on their corporate finances. Most commonly, plans have adjusted their investment strategy. Other common actions have been to reduce benefits, convert plans to defined-contribution plans and, unfortunately, even terminate plans.

While the United States is considering more transparent accounting for pension plans, the United Kingdom is already there. In November 2000, the United Kingdom's Accounting Standards Board issued Financial Reporting Standard 17 (FRS 17), the first pension accounting standard to require transparent accounting for pension plans. Therefore, it is not surprising that the SEI Investments study noted: "U.K. companies resorted to more dramatic moves

in managing their pension problems. Forty-two percent of the U.K. companies closed the plan versus 22 percent of the U.S. Similarly, 45 percent of U.K. companies converted to defined contribution versus 17 percent for the U.S. companies."[1]

5. Strategies to Reduce Risk

Although the smoothing methods used in FAS 87 reduce the volatility of reported pension expense, they do not reduce the risk of having insufficient assets to cover liabilities to participants, shareholders and the PBGC. The best way to reduce this risk, and the volatility of a transparent-accounting expense, is to have a better match between assets and liabilities. We will consider two options to mitigate this risk: increase the allocation to duration matching bonds and purchasing annuities.
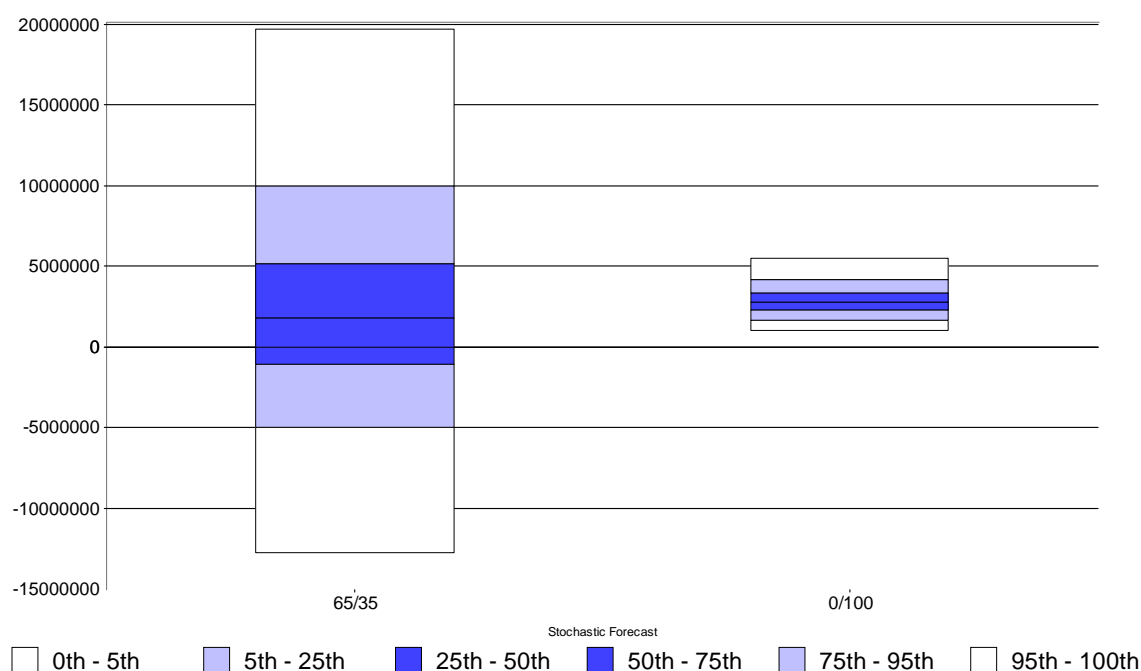
5.1. Invest in duration matching bonds

An immunized bond portfolio purchases bonds that mirror the future cash flow of pension plans. However, since benefits are growing and changing in active pension plans, exactly matching cash flows with immunization might not be possible. A more common method of reducing risk is to have a bond portfolio that matches the duration of the plan liabilities. Under duration matching, bonds are purchased that move in the same direction and approximate amount as the liabilities when interest rates shift. Although this does a good job of controlling volatility, the amount of the movement is often not exactly the same because there may be shifts in the shape of the yield curve.

Graph 2 below, which uses the same plan information as Graph 1, shows the effect of duration matching assets to liabilities. The volatility in transparent accounting is significantly reduced when the investment strategy is a 100 percent bond allocation, with the bonds having a duration matching the liabilities, as compared to a 65 percent stock and 35 percent bond allocation.

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[1] *The Impact of Pension Funding on Corporate Finances: A Multinational Study Sponsored by SEI Investments, May 2003.* Management Summary, page 8.

Graph 2

**Transparent Pension Cost
2001**

20000000		
15000000		
10000000		
5000000		
0		
-5000000		
-10000000		
-15000000		
	65/35	0/100

Stochastic Forecast

☐ 0th - 5th   ◻ 5th - 25th   ■ 25th - 50th   ■ 50th - 75th   ◻ 75th - 95th   ☐ 95th - 100th

Although switching to a 100 percent bond allocation might be considered too extreme by many plan sponsors, there are cases where this has happened. The most well known is probably Boots Company in the United Kingdom. This type of asset-allocation shift is not anticipated by most U.S. companies at the current time but might be considered more seriously if transparent accounting is adopted. In the multinational study sponsored by SEI Investments in May 2003, it was noted that: "U.K. companies appear to be more willing to try new approaches in contrast to U.S. companies. Almost unanimously, U.K. companies (90 percent) expressed interest in trying other investment strategies compared with over half (54 percent) of U.S. companies. A similar pattern emerged with regard to different funding strategies: 40 percent for the U.K. versus 17 percent for the U.S. Fifty-nine percent of U.K. companies would consider an all bond portfolio."[2]

5.1.1. How much to allocate to duration matching bonds

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[2] *The Impact of Pension Funding on Corporate Finances: A Multinational Study Sponsored by SEI Investments, May 2003.* Management Summary, page 9.

It is likely that many plan sponsors in the United States will want to re-evaluate their asset-allocation selection if transparent accounting is adopted. One of the ways we determine an appropriate asset allocation is to look at return targets and shortfall risks, a method made popular by the book *Return Targets and Shortfall Risks: Studies in Strategic Asset Allocation*, by Martin L. Leibowitz, Lawrence N. Bader, and Stanley Kogelman. This book covered only dual constraints. However, we have expanded this approach to allow for multiple constraints at one time, using ProVal PS software.

First, we will build an efficient frontier. The efficient frontier can be an asset-only-efficient frontier or a surplus-efficient frontier that considers the liabilities. We commonly use excess returns, which we define as the excess of the asset class return over the liability return, where the liability return is the change in the liability due to interest rate changes (i.e., exclusive of normal cost and benefit payments). The efficient frontier will map the asset allocations that yield the greatest return for the least amount of risk. Graph 3 below shows the asset-allocation options on the efficient frontier.

Graph 3
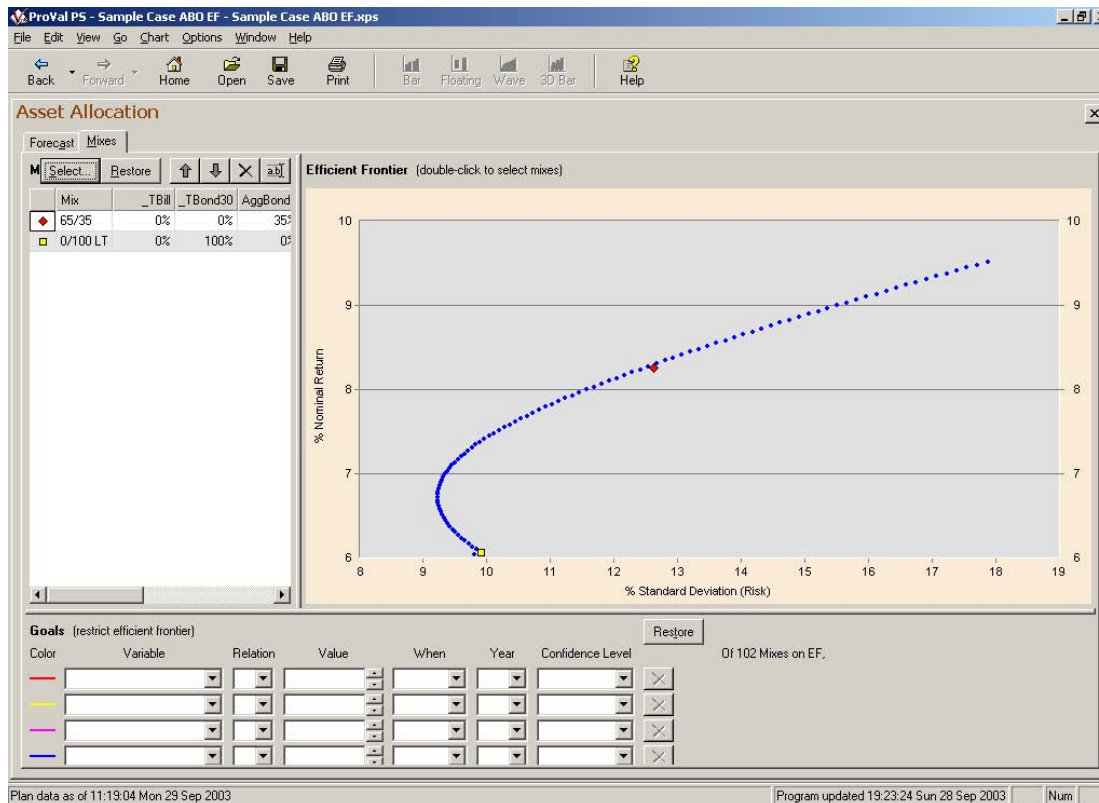
Before incorporating the plan sponsor's goals and constraints, the entire efficient frontier is available as possible options for the plan sponsor to consider.

As the plan sponsor adds constraints, the potential investment options on the efficient frontier are restricted. For example, suppose a plan sponsor would like next year's pension expense to be below 16 percent of pay with a 95 percent probability. This will restrict the asset-allocation options on the efficient frontier to those whose results lie on the graph, below a certain level of standard deviation of returns. Otherwise, volatile returns will cause the pension expense to exceed our 16-percent-of-pay limitation. This is shown in Graph 4 below by shading the options at the right of the efficient frontier.

Graph 4
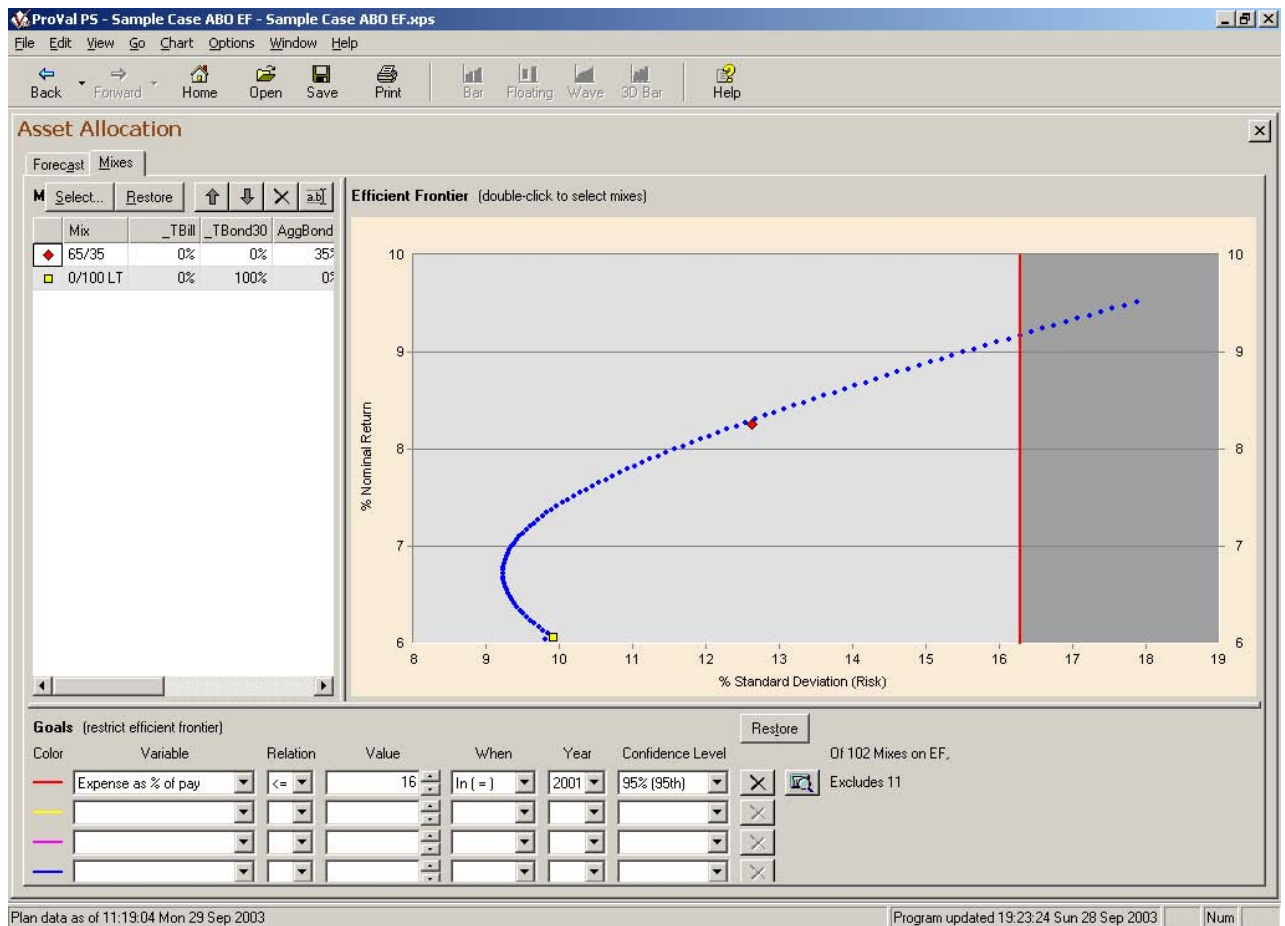
In this case, the current 65 percent stock/35 percent bond allocation, as shown by the diamond, meets this constraint. However, suppose instead that the plan sponsor wants to reduce pension expense to 15 percent of pay with a 95 percent probability. This restricts the asset allocation options even further. As you can see in Graph 5 below, the current allocation, as shown by the diamond, does not meet this constraint. The allocation to bonds would have to be increased to 41 percent to meet this revised condition.

Graph 5
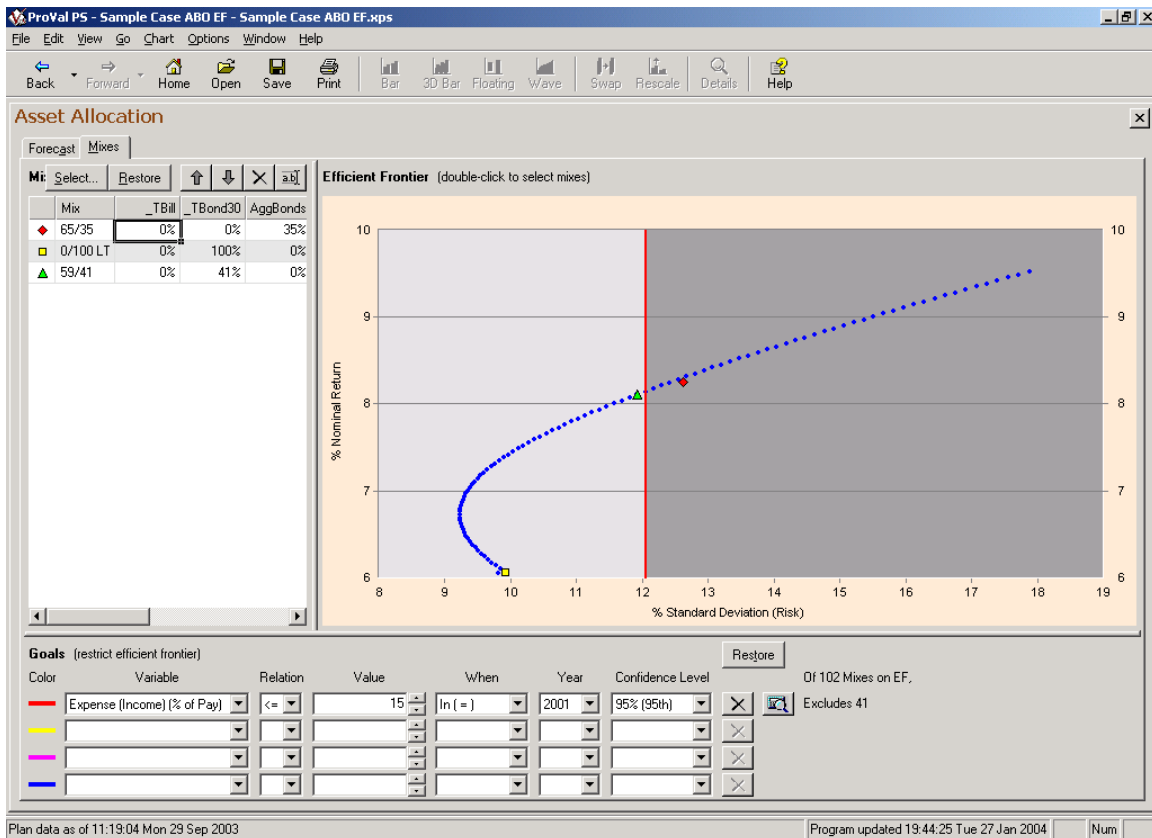
If we continue to tighten our constraint, a higher percentage of plan assets will need to be allocated to bonds. However, the downside to selecting an asset allocation with a higher percentage of bonds, to reduce pension expense volatility, is that the expected rate of return is lowered. Although this tradeoff might be acceptable to plan sponsors, there is another option, purchasing annuities, which should be considered.

5.2. Should companies move back to insurance contracts?

We have shown above that in a transparent-accounting environment, plan sponsors may shift a larger portion of their pension-plan portfolio into bonds to forfeit some of their equity-risk premium for a less volatile expense. Now that plan sponsors are considering both return and risk, they may want to reconsider their decision to self-insure. It may once again make sense to purchase group annuity contracts from insurance companies to fund pension liabilities.

Plan sponsors will need to decide whether they should self-insure their plan or purchase annuity contracts. This decision should consider both the probability of outperforming the return of an insurance company and the excess return for taking on the investment risk. Let's look at the decision process for some sample cases.

The sample cases below use the following assumptions:

1. We have a risk-averse plan sponsor. The conditions that must be met in order to self-insure are:

- Have an expected median return 0.50 percent (50 bps) higher than the insurance contract to cover internal expenses and/or distractions of management from the core business, and;

- Expect to earn a higher return than the insurance contract in seven out of 10 years to cover the risks involved in self-insurance.

2. We will consider the following asset allocations with expected returns based on our capital-market assumptions (see Appendix 2):

Table 1

Portfolio	Expected Return	30th Percentile Return
65% stocks / 35% bonds (Current)	8.25%	6.25%
60% stocks / 40% bond	8.07%	6.19%
43% stocks / 57% bond	7.46%	5.99%

3. We have obtained bids for purchasing the annuities from high-quality insurance carriers. We have determined the effective rate of the best bid to be 6.25 percent.

**Sample Case 1—Large frozen plan**

In our first sample case, we have a large frozen plan with known benefit amounts and an appropriate mortality assumption. We are also assuming that the plan has so many participants that individual longevity risk is completely removed. Since we do not have to worry about individual longevity experience or mortality improvements, we can focus on investment risk.

The plan sponsor is currently expecting to receive an extra 2 percent return (8.25 percent expected return from the asset allocation and self-insurance less 6.25 percent from the insurance). This is enough to accept the risk involved in remaining self-insured. If the plan sponsor were considering moving to a 100 percent long-term Treasury bond portfolio, he/she would, hopefully, purchase annuities instead to remove the risk and receive an expected 0.18 percent higher return (6.25 percent from the insurance less 6.07 percent if 100 percent in bonds. See assumptions in Appendix 2.). (Note: Insurance companies who are trustees for pension annuities hold approximately 4 percent in equities, 87 percent in fixed income and 9 percent in other assets.)

So, at what asset allocation would it make economic sense for the plan sponsor to purchase annuities instead of self-insuring?

Let's review the first constraint which is to have a median return 0.50 percent higher than the return under the insurance contract. To continue to self-insure, the expected return from the investments (net of expenses) would need to be 6.75 percent (6.25 percent from the insurance company plus 0.50 percent). As shown in Graph 6 below, the 65/35, 60/40 and 43/57 asset allocations all meet the first constraint.

Graph 6
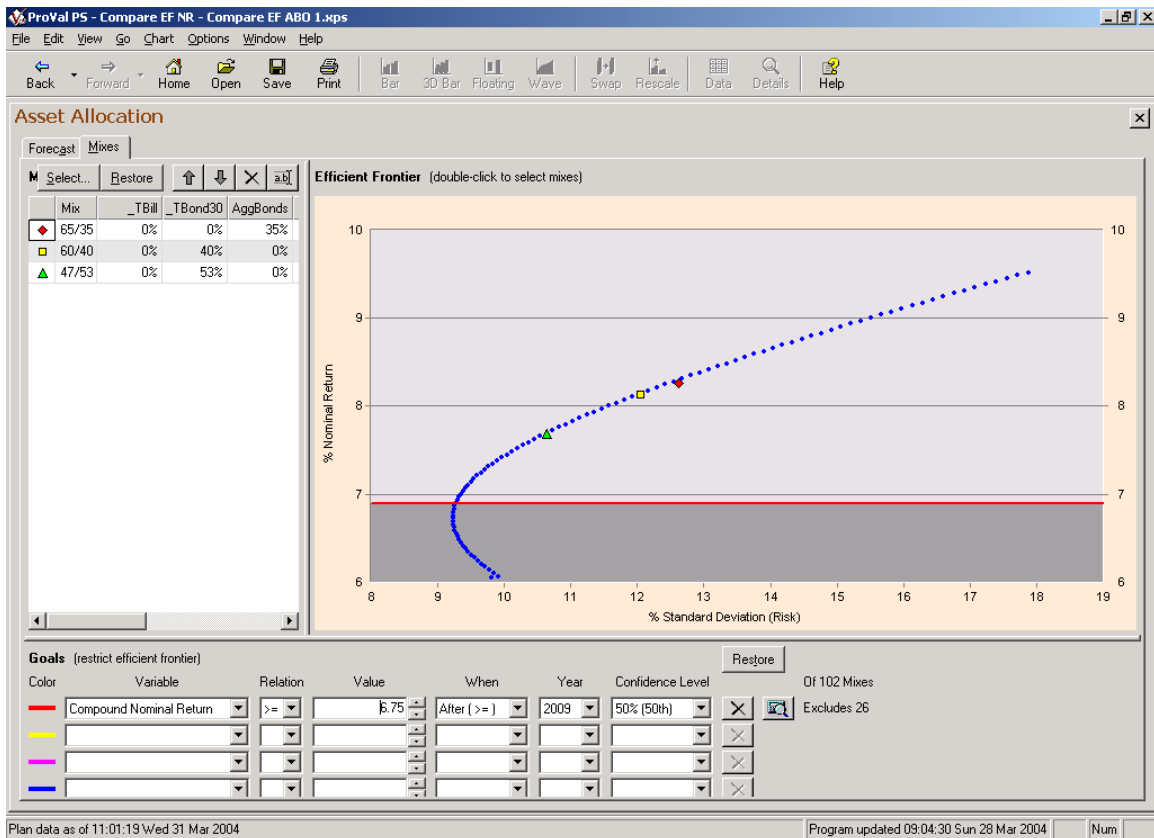
The second constraint is to have a higher expected return in seven out of 10 years. Therefore, to continue to self-insure, the asset allocation should produce 30th percentile returns higher than 6.25 percent. The 30th percentile return for the 65/35 asset allocation is 6.25 percent, just meeting this constraint. As shown in Graph 7, both the 60/40 and the 43/57 30th percentile results fail the second constraint. Therefore, if the plan sponsor is planning to reduce the allocation to stock, to either of these options, he should consider purchasing annuities instead. Purchasing annuities for this large frozen plan would completely remove its pension expense and volatility from the plan sponsors accounting books.

Graph 7

File   Edit   View   Go   Chart   Options   Window   Help

Back   Forward   Home   Open   Save   Print   Bar   3D Bar   Floating   Wave   Swap   Rescale   Data   Details   Help

Asset Allocation

Forecast   Mixes

M   Select...   Restore

Mix	_TBill	_TBond30	AggBonds
◆ 65/35	0%	0%	35%
□ 60/40	0%	40%	0%
△ 47/53	0%	53%	0%

Efficient Frontier (double-click to select mixes)

% Nominal Return

% Standard Deviation (Risk)

Goals (restrict efficient frontier)   Restore

Color	Variable	Relation	Value	When	Year	Confidence Level		Of 102 Mixes
red	Compound Nominal Return	>=	6.75	After (>=)	2009	50% (50th)	X	Excludes 26
yellow	Compound Nominal Return	>=	6.25	After (>=)	2009	70% (30th)	X	Excludes 64
magenta							X	
blue							X	

Plan data as of 11:01:19 Wed 31 Mar 2004   Program updated 09:04:30 Sun 28 Mar 2004   Num

Case 2—Large, ongoing plan

A large ongoing plan, besides investment risk, has inflation risk for future active benefits, as the benefits usually have a component related to salary paid in future years. Therefore, if benefits are purchased for active participants, just current accrued benefits would be purchased. The plan sponsor could instead enter into an insurance contract that would allow the purchase of annuities for actives as they retire in the future. Therefore, plan sponsors will want to separately review their constraints for active and inactive benefits. They may conclude to purchase annuities only for inactive participants, or they might also decide to purchase annuities for active participants as they retire. Graph 8 below compares the transparent pension expense for a plan both before and after annuities are purchased for inactive benefits. Even without changing the asset allocation, the expense volatility declines.
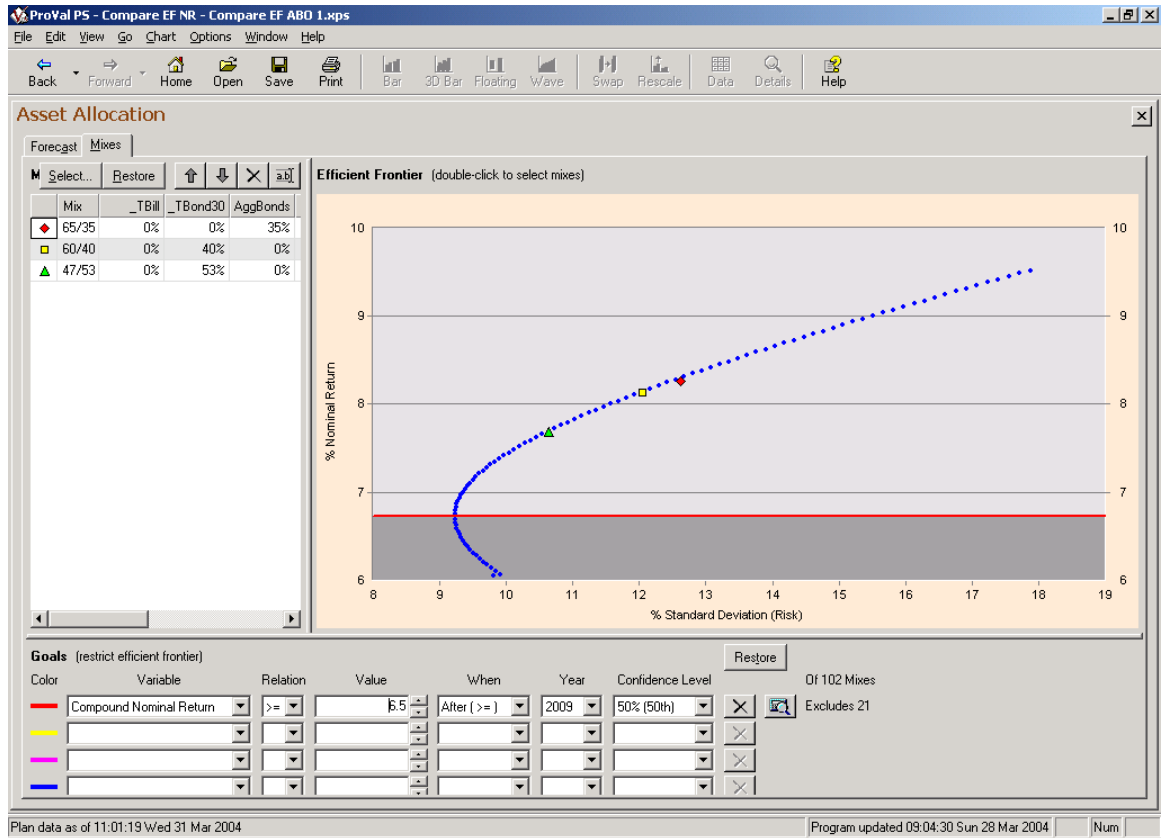
Graph 8

**Transparent Pension Cost
2001**

☐ 0th - 5th	☐ 5th - 25th	■ 25th - 50th	■ 50th - 75th	☐ 75th - 95th	☐ 95th - 100th

Stochastic Forecast
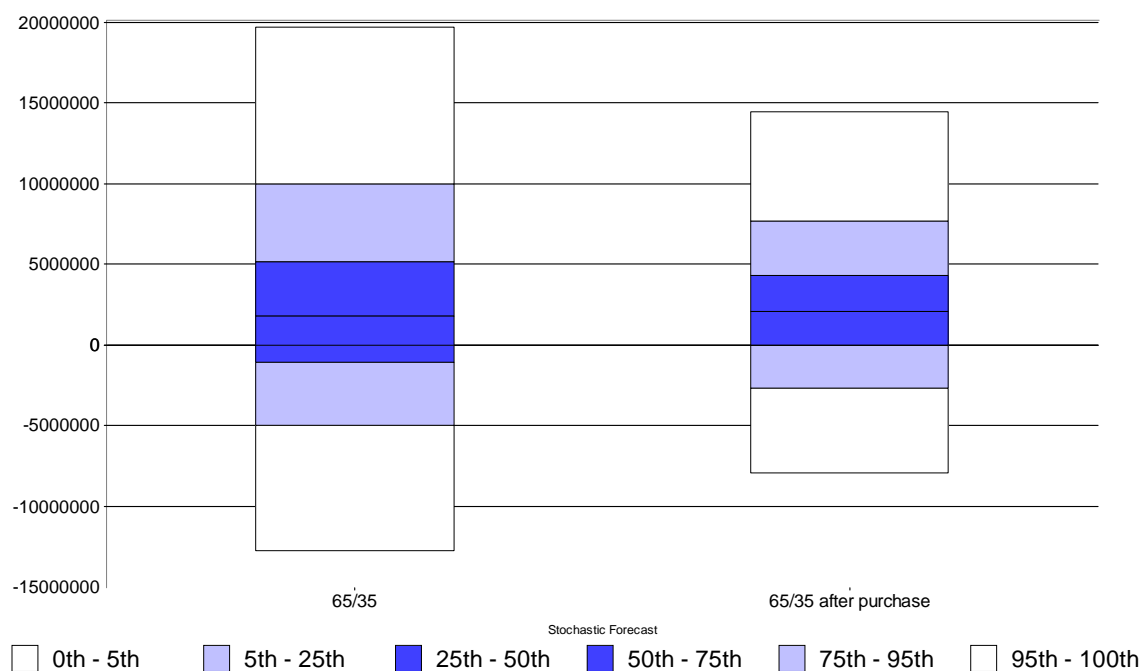
An insurer will be more conservative in purchase rates for active participant benefits to be purchased at a future date. Let's assume that instead of the 6.25 percent effective rate, the insurance company will only offer 6.00 percent for annuities purchased for future retirees. To meet the first constraint, the expected return from the investments (net of expenses) would need to be 6.5 percent (6 percent from the insurance company plus 0.50 percent). As shown in Graph 9, the 65/35, 60/40 and 43/57 asset allocations all meet the first constraint.

Graph 9

To meet the second constraint, the asset allocation should produce 30th percentile returns higher than 6 percent. Both the 65/35 and the 60/40 asset allocations meet this constraint. However, as shown in Graph 10, the 43/57 30th percentile result is 5.99 percent, which just fails the second constraint. Therefore, the plan sponsor should also purchase benefits for actives as they retire if the asset allocation selection is 43/57.

Graph 10
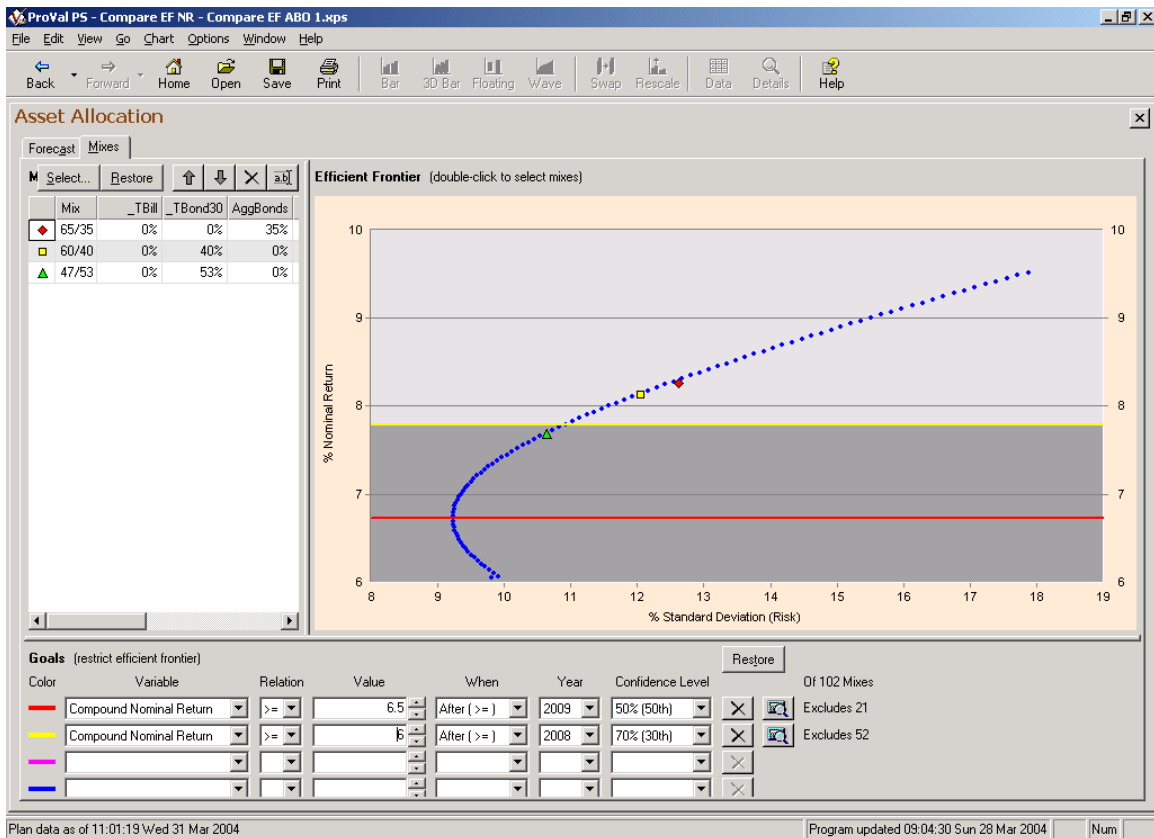
## Case 3—Small plan with longevity risk

Let's consider an extremely small plan with only one participant. In practice, a small plan with only one participant might be forced to pay a lump sum or purchase an annuity since the plan sponsor may no longer exist after the participant retires. Also, it would be wise for a plan with one participant to purchase an annuity since the participant's death is too unpredictable for a plan to take on the investment and longevity risk. Although the following example usually does not occur in practice, we will go through the same steps that we applied to the other cases for illustrative purposes.

Along with investment risk, a small plan is also subject to longevity risk. This additional risk will lower the probability that we will win seven out of 10 times. Let's assume the average retirement age of the participant is 55. If we look at a random distribution of deaths, the average age at death of an age-55 retiree is 80, and there is a 70 percent chance that the age at death is 88 or younger. A plan

sponsor will need to consider the sufficiency of assets and returns if the participant lives longer than expected.

Let's assume the plan sponsor has the same constraints as the large frozen plan for when to purchase annuities. And, even though this is a small plan, the 6.25 percent effective purchase rate is still offered by the insurance company. To meet the first constraint, the expected return from the investments (net of expenses) would need to be 6.75 percent (6.25 percent from the insurance company plus 0.50 percent). Graph 11 shows that the 65/35, 60/40 and 43/57 asset allocations meet the first constraint.

Graph 11
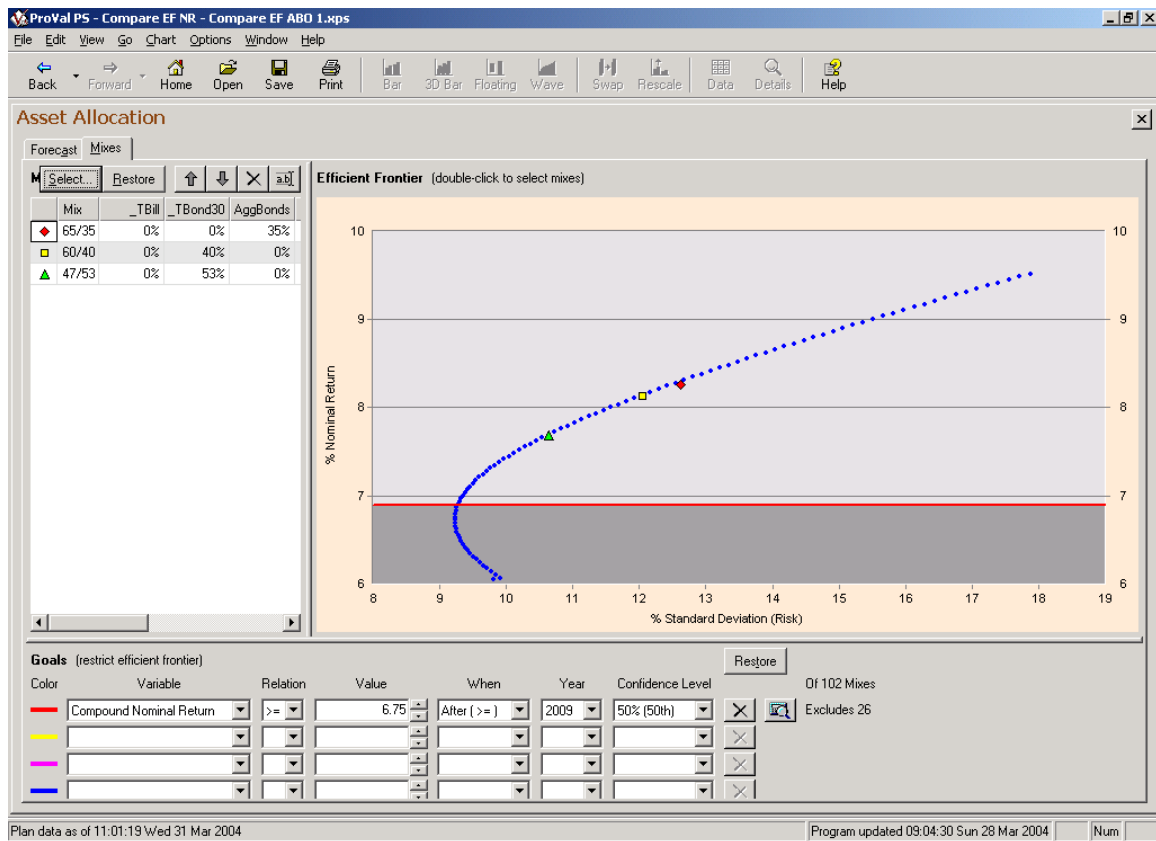
To meet the second constraint, the asset allocation should produce 30th percentile returns above 7.17 percent, 6.25 percent adjusted by 0.92 percent (The return needed for the present value of a payment from age 55 to 80 at 6.25 percent to last until age 88 instead). As shown in Graph 12, the 30th percentile

returns for all three of our asset allocations fail this constraint. Therefore, this plan sponsor should purchase an annuity.

Graph 12
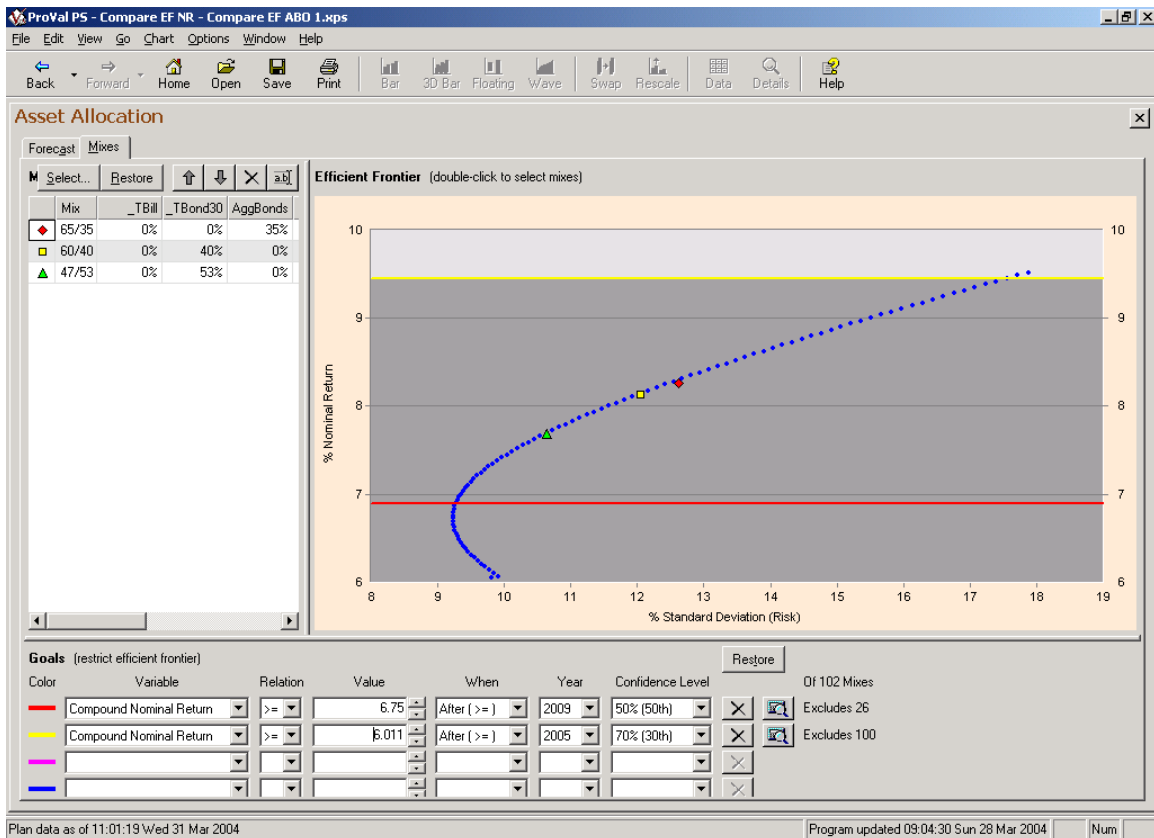
With a small plan, the plan sponsor needs to seriously consider the sufficiency of plan assets taking into account longevity risk.

Case 4—Medium-size plan

Unfortunately, in practice, we might not always run across plans that are so large that we can ignore longevity risk or so small that we can make the above return adjustment for one participant. However, we can use approximations to determine appropriate return adjustments for medium-size plans.

Our basis for the appropriate approximation is the adjustment of standard deviation of returns. If we know the standard deviation of investment returns for one year, we can approximate the standard deviation over two years by dividing by the square root of two. We can also approximate the standard deviation over three years by dividing by the square root of three. In fact, we can approximate the standard deviation over n years by dividing by the square root of n.

If we apply this same logic to the number of participants rather than the number of years, we can approximate the return adjustment needed for a plan with m participants by dividing the adjustment for one participant by the square root of m. This adjustment can be refined for plans where a few participants make up the majority of the liability. For example, in a case where two participants make up 90 percent of the liability and eight make up the rest, we could modify the 0.92 percent adjustment used above in the following manner.

$m = (2 \times 90\%) + (8 \times 10\%) = 2.6$

The return adjustment needed = 0.92%/square root of 2.6 = 0.57%.

The needed return from any asset-allocation decision = 6.25% + 0.57% = 6.82%.

Therefore, if the asset allocation under self-insurance does not produce a return of 6.82 percent at the 30th percentile level, then this plan sponsor should purchase annuities.

6. Miscellaneous Issues

There are a few issues that we chose not to address at this time that might need to be dealt with later in practice. First, there are usually delays between when the decision is made to purchase annuities, the time when the contract is signed and the time when the assets are actually transferred. There is risk that the market conditions and asset values could change during these delays. We are holding these variables constant in our cases.

Second, we chose to adjust for the risk of low investment returns and the risk of longevity separately. It may be too simplistic to consider these risks independently.

Third, most pension liabilities are not calculated at market value based on yield curves. Pension actuaries are permitted to use a fixed rate in their calculations and this rate is not always changed to reflect market conditions. As a result, there are times when liabilities appear to have a duration of zero since the actuary is not changing the interest-rate assumptions to calculate the liabilities even though there have been movements in market rates. Therefore, the actual duration of the liability to be matched is often in question.

Many of the individuals pressing for transparent accounting would like the calculations of the present value of liabilities to use the Treasury bond yield curve. This may produce a liability higher than the value of the liability using annuity-purchase rates. In this case, there is an added advantage of reducing the value of liabilities by purchasing annuities instead of self-insuring. Perhaps this advantage is offset by the solvency risk of the insurance carrier.

Last, we have not discussed the tax benefits of investing pension funds in bonds. We recommend reading *The Case Against Stock in Corporate Pension Funds* by Lawrence Bader for a discussion of this topic.

7. Conclusion

Plan sponsors originally moved away from funding pension plans using insurance company products that offered annuity purchases in part because they wanted to capture the rewards of higher returns from investing in equities. Because of potential accounting and funding changes, the risks inside self-insured pension plans are coming to light. Now that plan sponsors and shareholders are becoming more aware of these risks, insured products and annuity purchases should be reconsidered.

There are large amounts of assets at stake. The January 26, 2004 issue of *Pension & Investments* stated that the assets of just the top 200 pension funds are $3.65 trillion in the year ended September 30, 2003. Of these, $2.89 trillion are in defined-benefit plans. Some advisors, who have a self interest in having the plan invest in a trust fund, may be reluctant to suggest that a pension plan purchase annuities. Therefore, insurers and independent consultants need to bring these issues to the attention of plan sponsors. If they do, and if independent advice is given, there is the potential for insurance companies to recapture large amounts of assets that were lost to trust funds.

Appendix 1

Plan Provisions

Participation eligibility:	Immediate
Service:	Elapsed time from date of hire
Final average salary:	Avg. of high consecutive five from last 10 years
Normal Retirement Benefit:	1.5 percent of final average salary plus 0.65 percent of final average salary in excess of covered compensation times years of service up to 30 years
Normal form of payment:	Unreduced joint and 50 percent survivor annuity for married participants; life annuity for single participants

Retirement benefit:

Eligibility	Age 55 and 10 yrs of service
Commencement	Immediate
Benefit	Normal retirement benefit reduced for commencement prior to age 65
Early ret. reductions	Reduce 4 percent for each year from 60-62, 6 percent for each year from 55-60

Termination benefit:

Eligibility (i.e., vesting)	Five years of service
Commencement	Age 62
Benefit	Normal retirement benefit

Pre-retirement death benefit:

Eligibility	Five years of service
Commencement	Age 55
Benefit	The amount that would have been paid to the beneficiary if the participant had retired the day preceding death and had elected a joint and 50 percent survivor annuity

Disability retirement benefit:　　None

Valuation and Projection Assumptions

Mortality:	1983 Group Annuity Mortality
Termination:	See Table I (below) for sample rates
Retirement:	See Table II (below)
Discount rate:	Simulated based on 30 yr Treasury (see assumptions in Appendix 2)
Salary inflation:	3 percent
Merit salary scale:	1.5 percent through age 50
Increase in regulatory items:	3 percent
Marriage assumptions:	80 percent are assumed to be married, with husbands assumed to be 3 years older than their wives

Table I: Sample Termination Rates

Age	Rate
20	10
25	8
30	6
35	4
40	3
45	2
50	1
55	0

Table II: Retirement Rates

Age	Rate
55 – 59	5
60	20
61	10
62	100

Appendix 2

Capital Market Assumptions

Long Term Inflation: 3%

30 yr Treasury:
 Expected Return   6.07%
 Standard Deviation   9.91%

Aggregate Bonds:
 Expected Return   5.91%
 Standard Deviation   7.96%

Stocks:
 Expected Return   9.52%
 Standard Deviation   17.88%

Correlations coefficients:
 Aggregate Bonds & Stocks   .2559
 30 yr Treasury & Stocks   .1684
 30 yr Treasury & Bonds   .4781

For expense calculations, our sample plan has a funded ratio of 88 percent.

Participant Information

Age/Service Scatter Chart

Years of credited service:

Attained Age	Under 1 No.	Avg. Comp.	1 to 4 No.	Avg. Comp.	5 to 9 No.	Avg. Comp.	10 to 14 No.	Avg. Comp.	15 to 19 No.	Avg. Comp.	20 to 24 No.	Avg. Comp.	25 to 29 No.	Avg. Comp.	30 to 34 No.	Avg. Comp.	35 to 39 No.	Avg. Comp.	40 & up No.	Avg. Comp.	Total No.	Avg. Comp.
Under 25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25 to 29	0	0	12	9,318	113	19,102	0	0	0	0	0	0	0	0	0	0	0	0	0	0	125	18,163
30 to 34	0	0	6	5,965	83	24,584	44	27,374	0	0	0	0	0	0	0	0	0	0	0	0	133	24,667
35 to 39	0	0	10	16,754	63	25,973	39	30,611	33	29,024	0	0	0	0	0	0	0	0	0	0	145	27,279
40 to 44	0	0	0	0	55	28,822	24	41,749	16	34,612	4	74,422	0	0	0	0	0	0	0	0	99	34,734
45 to 49	0	0	8	20,022	35	39,196	19	38,125	11	20,678	0	0	1	80,024	0	0	0	0	0	0	74	34,647
50 to 54	0	0	1	21,277	33	27,167	10	35,041	12	34,793	2	79,227	5	75,134	0	0	0	0	0	0	63	35,235
55 to 59	0	0	0	0	2	81,987	10	21,796	20	27,323	3	67,320	1	140,107	0	0	0	0	0	0	36	35,291
60 to 64	0	0	0	0	9	38,034	8	46,728	10	34,093	2	94,601	3	46,222	4	73,440	0	0	0	0	36	46,630
65 to 69	0	0	1	31,819	4	29,469	2	18,222	6	21,917	2	39,429	0	0	0	0	3	63,544	0	0	18	32,619
70 & up	0	0	0	0	0	0	0	0	1	18,945	0	0	0	0	1	104,030	0	0	0	0	2	61,488
Total	0	0	38	13,906	397	25,977	156	32,713	109	29,306	13	71,243	10	73,447	5	79,558	3	63,544	0	0	731	29,259