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May 18, 2006

Mr. Robert Herz, Chairman
Financial Accounting Standards Board
401 Merritt 7
P.O. Box 5116
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Letter of Comment No: 3A
File Reference: 1025-300

In re: Reference Number 1025-300 – Extension of remarks in April 3rd letter

Dear Mr. Herz,

This letter is intended to provide more detailed analysis and illustrations of the ideas presented in my comment letter of April 3, 2006.

The April 3rd letter argues that a standard placing marked-to-market PBO surplus on the balance sheet would overstate the risk to shareholders of fluctuations in the value of surplus in a substantially funded plan. Instead, the plan should be modeled as a contingent obligation of the sponsor, posing substantial risk to the sponsor when under-funded but relatively little risk when over-funded. That letter made a broad-brush, conceptual case that the pension plan could be modeled as a put option written by the sponsor to participants. Here, let's examine in more detail how a pension plan could be modeled as a contingent obligation in practice.

The DB Plan as a Contingent Obligation

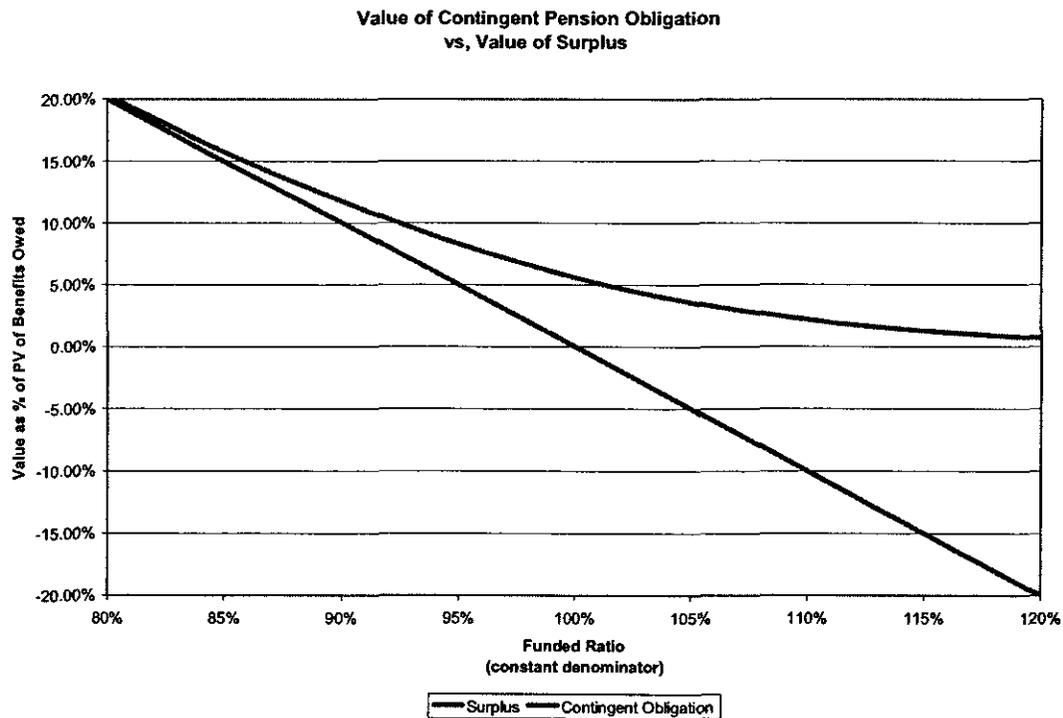
When a pension plan is substantially funded, it is not certain that the sponsor will have to make future contributions to make good on benefits owed to participants (see the attached addendum, which argues that the accrued benefit obligation [ABO] is the most appropriate measure of benefits owed for accounting purposes). This is certainly true if a plan has a surplus of assets over benefits owed, but it is also true to a lesser extent if a plan has assets lower in market value than benefits owed. There always remains some possibility that investment returns will be sufficient to meet liabilities.

Thus, the sponsor's obligation to the plan is contingent in nature: The sponsor *may* have to make additional contributions to its plan *if* existing assets plus investment returns prove insufficient to cover existing benefit promises when they come due. The correct economic measure of the sponsor's obligation to its plan is the expected cost of making such contributions. Changes in plan surplus affect this obligation differently when a plan is in surplus than when it is under-funded.

An under-funded plan has no cushion of surplus assets from which it can draw to compensate for disappointing asset returns. A dollar change in its (negative) surplus is in fact likely to translate into something near a dollar change in the amount of contributions the sponsor could expect to have to make. In contrast, the same change in the surplus of a significantly over-funded plan will change expected future contributions very little. The plan surplus simply absorbs the impact of the change. Interpolating, the contingent obligation of the sponsor to a plan that is just fully funded (zero surplus) has an intermediate sensitivity to changes in mark-to-market surplus.

These relationships are shown graphically in Exhibit 1. The Exhibit compares a contingent obligation measure of the pension plan (the orange line) to a mark-to-market surplus measure (the blue line). Both are shown as a function of the mark-to-market ratio of plan assets to plan liabilities (and holding plan liabilities constant). The surplus measure is, of course, a 45-degree line. The two are broadly similar for a plan that is under-funded, but diverge completely for a plan with assets greater in value than its liability.

Exhibit 1

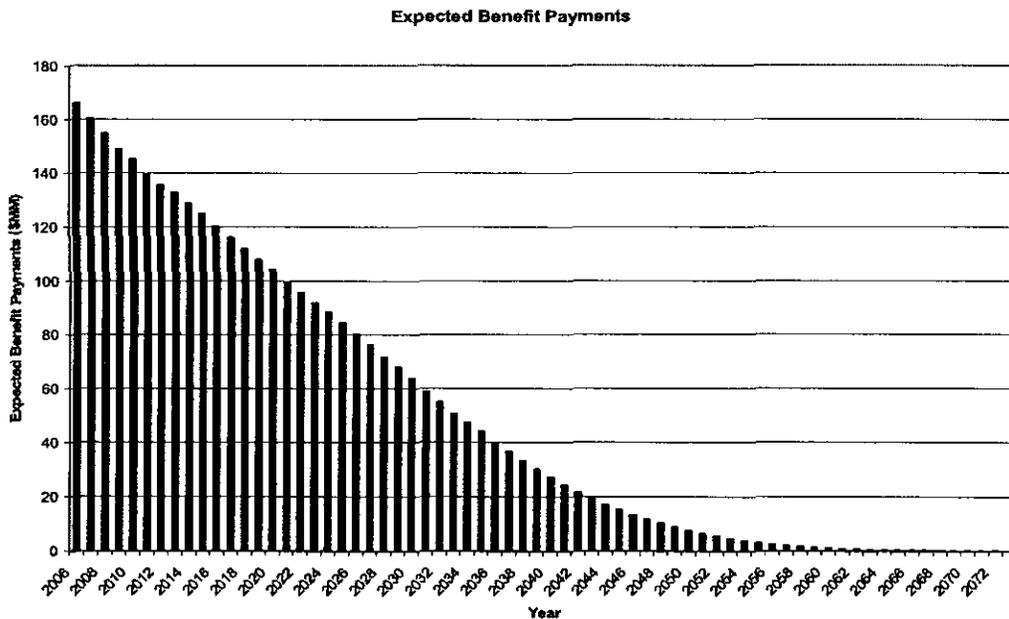


An appealing feature of an accounting standard that represents a pension plan as its net surplus is that we think we know how to measure the difference between assets and liabilities, and how to mark them to a market value, well enough for accounting purposes. How do we measure the pension as a contingent obligation with a similarly adequate degree of comfort in the accuracy of the result?

The previous letter argued that the contingent obligation is, in fact, a type of put option written by the sponsor to its plan beneficiaries. In effect, if the beneficiaries find that plan assets are insufficient to fund the benefits they are owed, they can put whatever assets there are to the sponsor and demand a check for the full amount of benefits owed. The most straightforward way to model the contingent pension obligation is as a put option using the basic Black/Scholes option pricing formula. As we shall see, the assumptions and calculations required to do so are surprisingly straightforward.

We will then apply a Black/Scholes valuation model to two detailed examples, XYZ Corporation and ABC Incorporated. Whereas the pension benefits that each of them projects they will owe are identical, as shown in Exhibit 2, XYZ is under-funded, while ABC has a material surplus. We will value each of their pension plans as a contingent obligation. Finally, we will review and apply the accounting rules outlined in the previous Viewpoint, showing how each firm would account for new benefit accruals, contributions, investment returns, and changes in asset mix under a contingent obligation accounting framework.

Exhibit 2



Valuing the Contingent Pension Obligation Using a Simple Black/Scholes Approach

The classic Black/Scholes put option pricing formula¹ has five required inputs:

- Time until the option expires
- A risk-free rate of interest
- The price of the security on which the option is written
- A strike or exercise price at which the underlying security can be put or called
- The volatility of the underlying security's price.

To use Black/Scholes to value a contingent pension obligation, we must determine what characteristics of a pension plan correspond to each input, and then accurately estimate their values for a given plan.

Time to expiration. A thoroughly conventional assumption to make is that a pension sponsor has a fixed asset mix policy and remains at risk until the last dollar of promised benefits is paid. This sets up an appallingly complex option problem, with path-dependent results and volatility levels that change as each benefit-related cash flow is paid out.

Fortunately, a moment's reflection reveals that it is hard to justify assuming a constant asset mix policy. We might assume just as validly that, after a year or two, the sponsor would shift to a fifty-fifty stock/bond mix, or to complete liability immunization. Regardless, the sponsor is not required to place itself at risk to a degree that is permanently fixed. In evaluating the contingent obligation, the sponsor is irrevocably committed to a given risk exposure only for the length of time necessary to unwind the risk exposure and move to a minimum-risk portfolio instead.

$$^1 P = e^{-r \times t} \times N(y + \sigma \times \sqrt{t}) - S \times N(y)$$

Where:

$$y = \ln(e^{-r \times t} K / S) / \sigma \times \sqrt{t} - 0.5 \times \sigma \times \sqrt{t}$$

P is the put price

r is the risk-free rate to expiration

t is the time to expiration

σ is the volatility of the underlying security (annualized standard deviation of return)

N(x) is the cumulative normal distribution function of x

S is the underlying security price

K is the strike price

Exposure to risk for longer than that time is voluntary and can be eliminated at will. Logically, it should not be built into the value of the contingent pension obligation.

How long is the sponsor committed to a given asset mix and corresponding risk exposure? Realistically, staff must develop a recommendation on asset allocation and present it to the Board; consultants and legal counsel must issue supportive opinions; managers for the new allocation must be researched and hired; and a transition strategy implemented. We could reasonably assume that this process would take a year.

Every day that the sponsor does not initiate the process to revise its asset allocation extends the time to which it is committed to its existing asset allocation by a day.

If the contingent pension obligation is a put option, the life of that option is not the entire life of the liability, but only the time the sponsor must hold the existing policy asset mix. After that time, the sponsor could elect to eliminate its risk exposure, locking in the value of its contingent obligation thereafter and extinguishing any further “optionality.” For valuation purposes, the contingent obligation as a put has a time to expiry equal only to the time it would take the sponsor to shift to a policy of liability immunization—not the time until all benefits are paid out.

The interest rate assumption is comparatively easy to make, once we determine the time to expiration for modeling purposes. It is the zero-coupon Treasury yield for the time to expiration, which, we have just seen, is reasonable to set at one year.

The underlying asset, in the case of a pension plan, is the portfolio of investment assets held by the plan, at current market value.

The strike price is the present value of future benefit payments owed to participants, as of the option expiration date (one year). It is when the value of investment assets falls below the value of benefits owed that additional sponsor contributions to the plan are likely to become necessary. Indeed, if we assume that the plan is to shift to a liability immunizing strategy after a year, the sponsor must inevitably make contributions worth the difference between the value of assets and benefits owed.

Here another apparent problem arises: The present value of benefits owed fluctuates with market interest rates. The Black/Scholes model assumes a fixed strike price. How can the present value of benefits owed be considered the equivalent of an option strike price if it fluctuates in value?

This question is simple to answer if the sponsor enters into swap transactions to hedge the pension liability to a one-year maturity. By doing so, the sponsor agrees to pay a counterparty one-year LIBOR on the present value of the estimated benefit payments, and to receive fixed payments that cover the benefit payments. By entering into the swap, the sponsor sheds its responsibility to make fixed benefit payments scheduled into the distant future and has instead assumed the obligation to service a one-year loan, to be rolled over at prevailing market rates each year.

At year-end, the hedged sponsor will owe its plan the amount by which the assets are less than the maturity value of the hedged liability. That amount will be the current value of benefits owed² plus interest at one-year LIBOR, with virtual certainty. The contingent pension obligation is a put option the sponsor has given to its plan, with the characteristics summarized in Exhibit 3.

Exhibit 3
Determinants of Pension Liability Value when Benefits Owed Are Hedged

Time to expiration	1 year
Exercise price	Value of benefits owed ^x (1 + one-year LIBOR)
Underlying security price	Market value of assets
Volatility	Return volatility of assets
Risk-free rate	One-year LIBOR

Evaluation of the option is a straightforward application of the Black-Scholes formula, after all.

Now, what if the sponsor does not enter into a liability hedging swap? We can think of the unhedged sponsor as having entered into a liability-hedging swap anyway—using the pension asset portfolio itself as the counterparty. The contingent pension obligation becomes as described in Exhibit 4.

² We ignore benefits newly earned during the year.

Exhibit 4

Value of Pension Liability—No External Hedge of Benefits Owed

Time to expiration	1 year
Exercise price	Liability value \times (1 + one-year LIBOR)
Underlying security price	Market value of assets
Volatility	Return volatility of (assets + swap exposure)
Risk-free rate	One-year LIBOR

In this case (where the sponsor has not actually hedged the plan's liability cash flows with external counterparties), volatility is closely approximated by the annualized expected volatility of plan surplus, a familiar concept and commonly-estimated plan statistic.

The analyst who believes that the asset mix is fixed for a longer period, say, five years, may still use this technique. The assumed swaps must hedge the liability payment cash flows to a five-year maturity,³ the relevant expiration date is five years, and the relevant interest rate is five-year LIBOR.

Application to a Specific Case: XYZ Corporation

Valuation. Let's apply this technique to the DB plan of XYZ Corporation. Using the capital market assumptions detailed in Exhibits 5a and 5b, we first calculate the present value of the benefits owed (projected cash flows per Exhibit 2) as of year-end 2005, using the assumed Treasury-derived discount rates. We calculate a value of \$3.425 billion.

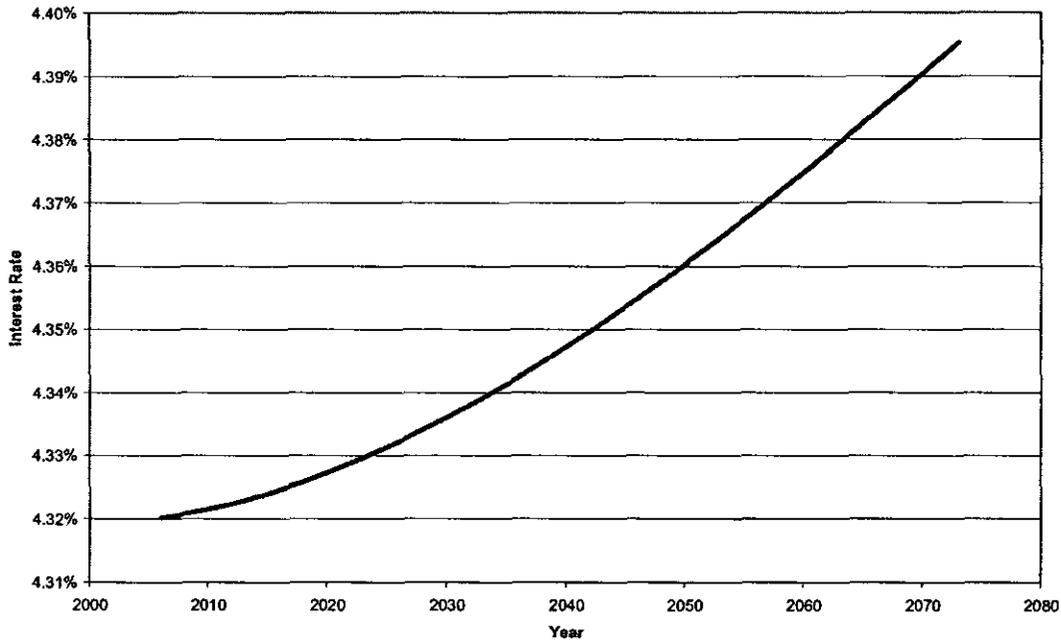
³ This means that some of the swaps must synthetically *extend* the maturities of near-term payments to five years.

Exhibit 5a

Volatility and Correlation of Returns (1-Year Horizon)				
	StdDev	Correlations		
		Stocks	AggBonds	Benefits
Stocks	17.78	1		
AggBonds	4.48	0.21	1	
PV of Benefits Owed	9.27	0.17	0.68	1

Exhibit 5b

Assumed Term Structure of Interest Rates



XYZ holds \$3.082 billion in plan assets that are allocated 60% to stocks tracking the Russell 3000, and 40% to bonds tracking the Lehman Aggregate bond index. We estimate the volatility of XYZ’s surplus to be 12.99%, again based on capital market assumptions shown in Exhibits 5a and 5b.⁴

⁴For the sake of convenience, the author used Russell’s Monte Carlo simulation tools to estimate surplus volatility. This could also be done using a risk/correlation matrix that included zero coupon securities of all relevant maturities.

For the reasons argued above, we assume that the risk exposure is fixed for one year. The risk free rate (i.e., one year Treasury yield) is 4.32%.

The inputs to the Black/Scholes put option formula that we will use to calculate the value of XYZ's contingent pension obligation, then, will be as shown in Exhibit 6.

Exhibit 6.

Contingent Pension Liability Valuation for XYZ Corporation, Year-End 2005.

Strike price:	\$3.573 billion
Underlying price:	\$3.082 billion
Risk-free rate:	4.32%
Annualized volatility:	12.99%
Time to expiration:	1 year

Note that the strike price is the present value of benefits owed, future valued to the assumed 1-year-ahead time of expiration. The resulting value of XYZ's contingent pension obligation is \$390 million.

Accounting impacts under a contingent obligation framework. Accounting for pensions as contingent obligations would follow three principal rules.

1. The modeled value of the contingent pension obligation appears as a liability on the sponsor's balance sheet.
2. Increases (decreases) in the value of this liability are recognized as expense (income) on the sponsor's income statement.
3. Contributions to the plan are recognized as expenses in the period the sponsor makes them.

Thus, a pension liability of \$390 million would appear on XYZ's balance sheet. In the footnotes to its balance sheet, XYZ would list the inputs used to calculate this liability value. Notice that the value of the reported liability would exceed in absolute value the (negative) surplus of pension assets over the present value of benefits owed. The size of the difference would be a function of the amount of risk taken by the plan; i.e., the riskiness of plan assets and the degree of mismatch between asset and liability behavior.

Rolling XYZ's Plan Forward a Year. Let's now consider how we would account for the operation of XYZ's plan for the year ending December 31, 2006. Many things will happen during the year:

- New benefits with a present value of \$200 million will accrue. Previously-accrued benefits will come closer to payment, increasing in present value by \$150 million. We model both these items, future-valued a year at 4.32% to a total of \$365 million, as an increase in the strike price of the Black/Scholes put option formula.
- XYZ will contribute \$450 million to the plan. In addition, plan assets will return 6%, or \$185 million. We add the total, \$635 million, directly to the underlying security value in the put formula.
- At year-end, XYZ will shift its asset allocation to 50% Russell 3000 and 50% Lehman Aggregate Bond Index. The shift in asset mix, along with the change in funding ratio, will reduce the volatility of surplus from 12.99% to 11.66%.

The inputs for valuation of XYZ's reported pension liability are therefore as shown in Exhibit 7.

Exhibit 7

XYZ Corporation, Year-End 2006

Strike price:	\$3.938 billion
Underlying price:	\$3.717 billion
Risk-free rate:	4.32%
Annualized volatility:	11.66%
Time to expiration:	1 year

XYZ's reported pension liability consequently declines by \$187 million, to \$203 million. On its income statement, XYZ reports as pension expense the net of its \$450 million contribution and the \$187 million decline in the pension liability, which comes to \$263 million.

XYZ at year-end 2005 is only about 90% funded on an ABO basis. To see what difference funding status makes, let's consider the case of ABC Incorporated, which is identical to XYZ in every respect but at year-end 2005 has assets valued at \$3.768 billion, or about 110% of liabilities. The year-end 2006 and 2005 input values and the resulting reported pension liabilities for ABC are as shown in Exhibit 8:

Exhibit 8

ABC, Inc.

	2006	2005
Strike price:	\$3,938 (million)	\$3,573 (million)
Underlying price:	\$4,444	\$3,768
Risk-free rate:	4.32%	4.32%
Annualized volatility:	10.60%	12.04%
Time to expiration:	1 year	1 year
Liability value:	\$ 11	\$ 52

Being in surplus at year-end 2005, ABC's pension liability was less sensitive to changes in input than XYZ's was. The net increase in surplus thus translated into a smaller decline in the value of ABC's pension liability than XYZ experienced, and a higher net pension expense in consequence. ABC's reported pension expense for 2006 will equal its \$450 million contribution less the \$41 million reduction in the pension liability, or \$409 million.

Contributions are of diminishing value to a plan already in surplus; they reduce an already-small liability by less and flow increasingly into expense as surplus rises under a contingent liability accounting framework. Conversely, a reduction in surplus due to disappointing investment returns or other factors will have a much less deleterious effect on an over-funded plan than an under-funded one.

Controversial Elements:

Contribution-Related Expense and the Treatment of Surplus

A couple of practical features of a contingent obligation-based accounting framework for pensions are likely to prove controversial. The most obvious is, as just discussed, some portion of a sponsor's contribution to its plan is likely to show up as an expense on the sponsor's income statement. At present, expense is generated as a result of the accrual of normal costs and contributions directly affect only balance sheet items. The key thing to remember is that a contribution that matches normal costs will result in an expense item that equals normal cost, just as it does under the existing accounting framework. The effect of a contribution larger or smaller than normal costs will vary with the level of plan surplus.

Another feature of the contingent obligation framework for pension accounting that may cause controversy is the treatment of a positive surplus of plan assets over the present value of benefits owed.

This net positive surplus is measurable and real, yet never appears on the balances sheet in a contingent obligation framework. Is this result appropriate? Yes, for three reasons.

First, pension surplus in any situation short of termination is an asset of dubious quality from the sponsor's perspective. Its value is highly volatile. Per ERISA section 404(a), it must be managed for the exclusive benefit of plan participants, not the sponsor, and so the sponsor legally cannot influence asset mix and surplus volatility out of self-interest. If the sponsor reclaims surplus from its plan, the reverted amount is subject to confiscatory levels of taxation. The sponsor that considers termination will often find that the cost of annuitization would eat up all surplus and more.

Second, a useful accounting representation must mirror faithfully the operational purpose of an asset or liability. A pension plan is a mechanism that allows an employer to discharge today an obligation it has assumed to compensate its workers in the future. In a normal business cycle, future benefits are promised, and the sponsor makes a contribution of an amount it expects will grow through investment enough to make good on its promises. The funded pension plan's operating purpose, then, is to make a liability go away. Because there is risk that it will fail to do so in disappointing market environments, it can never fulfill this purpose completely. The residual risk is appropriately represented as a contingent obligation. In this ongoing arrangement, surplus serves primarily as a bulwark against disappointment. It has value in that role (reducing the odds that additional contributions will be needed to pay existing accrued benefits), but beyond some point, the value per dollar locked up in surplus diminishes. Only by taking steps outside of the normal operating cycle of the plan can a higher value for surplus be realized.

This brings us to the third point. Ideally, a good accounting representation should not only depict faithfully the normal operating characteristics of an asset or liability, but make transparent the economic motivations for actions a firm may take outside of the normal course of operations. In the case of a pension plan, these include one particularly revealing event: combinations of formerly separate plans.

Consider the result if XYZ and ABC had merged their respectively under- and over-funded plans at the end of 2005. Under a rule requiring the listing of marked-to-market surplus on the balance sheet, we can discern no advantage in the merger and combination of plans: Net surplus of the combined plans would equal the sum of the plans' individual surpluses. In contrast, the advantage is clear enough to the firms' management: As a result, XYZ would no longer have to make catch-up contributions to its plan, and the freed-up cash flow could be used for new operating investments, retirement of debt, or increased dividends to shareholders of the merged entity.

Accounting in a contingent obligation framework makes the motives for the merger apparent. The pension liability of the combined entity, \$337 million, would be less than the sum of the contingent obligations of the individual plans before they were combined, \$442 million. This is shown in Exhibit 9.

Exhibit 9

Combination of XYZ and ABC Plans at Year-End 2005

	XYZ	ABC	Combined
Strike price:	\$3,573	\$3,573	\$7.146 billion
Underlying price:	\$3,082	\$3,768	\$6.850 billion
Risk-free rate:	4.32%	4.32%	4.32%
Annualized volatility:	12.99%	12.04%	12.44%
Time to expiration:	1 year	1 year	1 year
Liability value:	\$ 390	\$ 52	\$ 337

The combined plans show a contingent pension obligation of \$337 million, \$105 million less than the sum of the obligations of the two firms before the combination. The fact that the relatively "lazy" resources locked up in ABC's plan surplus would be more-effectively utilized curing XYZ's funding shortfall than cushioning ABC against investment risk is apparent as a matter of economic reality. Under a contingent obligation accounting framework this fact becomes apparent as a matter of accounting reality as well.

Conclusions

Treating a pension plan as a contingent obligation of the sponsor for accounting purposes more accurately mirrors the economic reality of the pension plan than a straight netting of marked-to-market plan surplus. While the two approaches yield similar values of the pension liability for under-funded plans, they diverge for over-funded plans. They do so because netting of surplus results in overstatement of both the effective value of plan assets in the normal cycle of operations, and the risks a plan poses to a sponsor when in positive surplus.

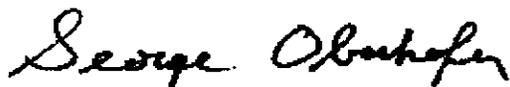
Valuation of the pension liability in a contingent obligation framework turns out to be a straightforward application of option pricing formulas that have been used extensively over the last quarter century and by now are very well understood in the financial and accounting communities. The volatility input assumption needed for option valuation is less heroic than the ELTRA assumption needed to make current pension calculations.

In practical application, contingent obligation-based pension accounting would provide sponsors with a superior set of indicators regarding the risks posed by their pension plan and the consequences of various policy steps:

- Sponsors (and their various stakeholders) would be able to observe that the risk their plans pose to them is relatively large for under-funded plans and relatively small for over-funded plans.
- The size of the reported pension liability would be larger for riskier asset allocations than safer ones, providing a concrete measure of the trade-offs risk-taking would entail.
- Sponsors would obtain accurate portrayals of the effects of extraordinary contributions or contribution holidays, changes in benefits, plan combinations, or changes in asset allocation policy, as well as a realistic picture of the plan in the course of normal operation.

For these reasons, we hope FASB will take a careful look at the possibility of moving to a contingent obligation framework as it revamps its standards for pension accounting.

Sincerely,



George Oberhofer
Senior Practice Consultant
Russell Investment Group

Addendum attached

Addendum

Why ABO Is the Right Measure

Stakeholders in companies that sponsor defined benefit pension plans are best served by adopting an accounting measure of benefits owed that is based on accrued, rather than projected benefit obligation cash flows. The distinction arises when the benefit formula includes years worked times final average pay. The accrued benefits approach is to measure benefits by plugging years worked to date times current average pay into the benefit formula. The projected benefits approach plugs into the benefit formula current years worked and an estimate of the final average pay the employee would earn if he or she worked until retirement. FASB's first-phase revision of pension accounting rules requires use of the projected benefit obligation in calculating the net pension liability or asset. Here are four reasons an accrued benefit approach is more appropriate, whether in the standard FASB appears to be moving toward or in a contingent liability framework:

1. **No legal obligation exists beyond what has accrued.** Sponsors voluntarily offer employees the opportunity to earn pension benefits. At any time before the employees fulfill the requirements for earning the benefits, the sponsor may withdraw its offer by freezing or terminating its plan. The projected benefit obligation lumps together benefits the sponsor is contractually obligated to pay with those employees have not earned and which the sponsor can decide at will no longer to offer. In recent months the trend toward freezing DB plans has accelerated dramatically, underscoring the voluntary and easily-revocable nature of the defined benefit offer.
2. **Recognition and economic event are best synchronized at the time of accrual.** Again, the event that makes a pension promise binding is the employee completing a period of work at some level of pay. The fact that the increment earned is a product of years worked and current pay means that the benefit the employee is eligible to earn becomes bigger each year for a typical employee receiving an annual raise. That does not mean that the economic event converting the offer of benefits into an obligation did not occur entirely in the period the participant actually worked to earn the benefit. It is specious in the extreme to argue that the presence of cumulative past service in the benefits formula makes it into a time machine that transports future work into the past.
3. **Conservatism: In whose eyes?** The strongest argument in favor of a projected benefit approach is that accounting principles demand conservatism. Traditionally, this has meant conservatism from the perspective of shareholders: stating assets at the lower of cost or market, and stating liabilities at a larger rather than smaller value if there is reasonable ambiguity. Typically, a projected benefit

obligation will be larger than the corresponding accrued benefit obligation in an ongoing plan. However, in the case of pension plans, shareholders are not the only ones to read accounting statements. The plan's position matters equally to participants and regulators. A measure of the pension obligation that includes some portion that can be withdrawn by the sponsor at its discretion disservices participants in the same way that an inflated measure of assets would disserve shareholders.

4. **The choice has no implication for regulatory funding policy.** The accounting profession's priority must be to portray firms' economic values as objectively, transparently, consistently, and accurately as possible. Its decisions with respect to pensions need have no impact on the objectives of regulators or public policy makers, who may wish to encourage funding ahead of accruals, minimize the exposure of the PBGC, etc. Regulations can define the liability or minimum funding requirement differently than generally accepted accounting principals to accomplish these objectives. Doing so would not make using ABO as the building block of a pension accounting standard any less correct or useful.