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A FRAMEWORK FOR ESTABLISHING CORPORATE RETIREMENT FUNDING POLICY

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How should a corporate plan sponsor view the funding of pension promises? This paper recommends the following four criteria for measuring the adequacy of proposed funding policies.

- I. **Management Review and Commitment.** Management must be informed of the probable future contribution requirements resulting from the adoption of a recommended funding policy and should commit to making such contributions. In committing to making contributions on the basis of a recommended funding policy, management should also be apprised of the impact of possible adverse actuarial experience on the level and pattern of future contributions.

There should also be a commitment to periodically review the funding policy in a comprehensive manner. It is recommended that such periodic review should be undertaken when major shifts in investment policy or anticipated benefit provision are made. In any event, review should occur at least once every five years.

- II. **Adequacy of Plan Assets/Benefit Security.** For purposes of ensuring benefit security, management should have a plan for and commit to a high probability that plan assets will be equal to or in excess of the present value of the accrued benefit liability on a plan termination basis as of the (five-year) planning horizon. In effect, this criterion requires that, should a pension plan (or plans) be terminated, retirees would be secure in their pensions and active employees would find an equity in the fund assets commensurate with their accrued pensions for service rendered through the date of plan termination.

In addition, there should be reasonable assurance that the funding policy would not be expected to result in any significant reduction in benefit security over a longer time horizon.

- III. **Reasonable Stability in and Understanding of Anticipated Contribution Patterns.** The pattern of contributions generated by the recommended funding policy should exhibit volatility and direction consistent with the corporation's regulatory and financial environment and ability to absorb changes in contribution requirements.

- Depending on industry and regulatory constraints, volatility may be avoided or accepted as a cost of business.
- The effect of funding method on the size and direction of contributions should be evaluated carefully, with particular attention to scenarios reflecting poor economic environments.

IV. Adoption of a Rational and Systematic Actuarial Method. The actuarial cost method selected should be acceptable under ERISA and should be consistently applied year to year.

MANAGEMENT REVIEW AND COMMITMENT

The Need for Management Information

How does the sponsor of a corporate pension plan review the adequacy of a particular funding policy? What are the considerations that apply in choosing one funding policy over another? This paper sets up a framework for plan sponsors to review alternative pension funding policies and decide on the appropriateness of a proposed policy.

Management is responsible for establishing the plan, for negotiating and/or approving the commitment of the firm to provide future benefits, and for determining that sufficient safeguards are in place so that these commitments are met. However, the extended timeframe and extensive uncertainty surrounding the payment of pensions can serve to obscure requirements for current financial support. Thus the need for management to receive good information on the risk of additional future contributions is imperative.

From the earliest studies of "What is a soundly funded pension plan?" the need to inform management has been strongly emphasized. The following statement is from a classic early monograph by consultant and actuary Dorrance Bronson written for publication by the Pension Research Council,

"An actuarially sound plan is one where the employer is well informed as to the future cost potential and arranges for meeting the costs through a trust fund or insured contract on a scientific, orderly program of funding under which, should the plan terminate at any time, the then pensioners would be secure in their pensions and the then active employees would find an equity in the fund assets commensurate with their accrued pensions for service from the plan's inception up to the date of termination of the plan."¹

¹Dorrance Bronson. *Concepts of Actuarial Soundness in Pension Plans*, Homewood, Ill.: Richard D. Irwin, Inc., 1957, p 171.

How Often Should Information Be Reviewed?

If the need for adequate management information and review has once been established, how often should policy be reevaluated? Many items compete for management attention; thus, policy must establish the frequency of review as well as its nature.

Any rational and systematic method of accumulating funds for pensions must entail periodic review of assumptions and status of the funding program.² Historically, the past ten years have seen changes in many areas that directly affect pension funding. Among those changes that may be easily quantified are the following.

- *Legislative Changes*
 - Tax Reform Act of 1986
 - Omnibus Budget Reconciliation Act of 1987
 - Technical and Miscellaneous Amendments Act of 1988
 - Omnibus Budget Reconciliation Act of 1989
 - Older Workers Benefit Protection Act of 1990
 - Unemployment Compensation Amendments of 1992
 - Omnibus Budget Reconciliation Act of 1993
 - Retirement Protection Act of 1994
 - Proposed Comprehensive Tax Reforms and changes to Social Security.

Note also that the effect on funding of a change in the law is often felt during several subsequent years due to delays in issuance of regulations on key portions of the law. For instance, nondiscrimination and coverage regulations were proposed and repropounded over several years and not final (for the presumably last time) until 1993, seven years after the Tax Reform Act of 1986 changed the law.

- *Benefit Policy.* The above legislative changes are likely to have caused multiple changes in benefit policy for pension plans. Changes in contribution limits and employer contributions to related plans (savings and ESOP) also have an effect on the relative importance of and ability to prefund pensions. Trends of the past include:
 - The move away from indefinite promises to more clearly defined commitments (for example, from final pay plans to cash balance plans)
 - New vesting rules

²"It would be well to emphasize again, in this chapter, that a position of accomplished actuarial soundness or funded ratio, to be maintained, requires a periodic review of the assumptions on which it is based." Ibid., p. 117.

- Changes in how private pension plans integrate with government plans
 - Increasing integration of pension, savings, retiree health and other employee programs.
- *Investment Return Projections.* Examination of historical returns on the assets of particular pension funds may not be valid because of environmental changes in corporate attitudes and policy on the range of acceptable investments. In addition, there may be changes in the range of investment products available. Nevertheless, an examination of the changes in the market view of future rates of return may be estimated by looking at the yields that borrowers are required to pay on long term debt. For example, as shown below, yields on long-term Treasury Bonds have shown significant differences in the past³:

Year	Yield
1982	12.76%
1983	11.18
1984	12.39
1985	10.79
1986	7.80
1987	8.58
1988	8.96
1989	8.45
1990	8.61
1991	8.14
1992	7.67
1993	6.60
1994	7.37

Changes have also occurred in accounting practice and in the relative importance of regulatory authorities.

Analysis of the historical changes in the pension plan environment appears to indicate significant changes on almost a yearly basis. Certainly, taking any five year period above, the outlook at the beginning and the end of the period will be different when viewed from any of a legislative, benefit policy, or investment standpoint.

Other considerations also call for review of the funding status at intervals. As with any projection model, future scenarios that may be analyzed are based upon a multitude of assumptions on future experience. The passage of time will

³Table 12A, *Statistics for Employee Benefits Actuaries*, Society of Actuaries, Schaumburg, Ill., April 1996.

invariably prove that some of these assumptions were incorrect and the divergence of the scenarios from the realized experience may safely be assumed to increase over time. Of particular importance is the degree of confidence in assumptions in the long-term future. In setting a funding policy, it is important to steer the policy by a long term view of the future. However, looking at past experience, it is clear that current assumptions on long-term future events can change significantly over a time as short as five years; deterioration in the view of the long-term future, in particular, may require action soon if financial commitments are to be kept. Thus, once again, there is a need to review the funded status at intervals less than or equal to five years apart.

On the other hand, there are arguments against frequent changes in funding policy. First, changes in funding policy may disrupt business planning for other processes such as investment management, cash flow analyses, and so on. Second, changes in actual funding *method* (including changes in methods of valuing assets) require IRS approval; where changes are frequent, automatic approval of the changes may not be available.⁴ Finally, the effectiveness of a particular funding strategy may not be meaningfully measured over a period as short as one year; in this situation random fluctuations may easily explain deviations from expected results. Meaningful analysis of the effectiveness of a particular funding policy requires the examination of the policy over a several year period.

In conclusion, sound funding of pension plans requires a commitment to periodically review the status of funding under the plan. Historical experience and the methods and assumptions used to examine projected funded status make clear the necessity for review at frequent intervals, certainly not to exceed five years. On the other hand, there is a need for stability in the funding process in order to allow for efficient use of funds and personnel and also for meaningful analysis of funding policy. This argues for review at less frequent intervals.

ADEQUACY OF PLAN ASSETS/BENEFIT SECURITY

Our second criterion is that the projected asset accumulation should be targeted to be greater than the liability for accrued benefits. Again, this is not a new conclusion.⁵ When this target has currently been reached, the criterion should be

⁴IRS Rev. Rul. 95-51 sets forth current standards for approval of changes in funding method.

⁵Assuming that the principal concern of pension funding is employee security and that the two principal guarantees of such security under a retirement plan are (1) the accumulation of funds to back accrued (or vested) benefits and (2) the stabilization of long-range costs, the following logical long-range funding objective may be postulated. Such a long-range objective, to be reached over a reasonable period of time, would be the larger of (a) a fund sufficient to provide in full all accrued (or vested) benefits if the plan were to terminate or (b) a fund sufficient (in the absence of further benefit increases) to maintain a stable contribution level if the plan were to continue." pp. 48-49 Frank L. Griffin, Jr., "Concepts of Adequacy in Pension Plan Funding," *Transactions of the Society of Actuaries*, Vol. XVIII, pp. 46-63, 1966.

replaced with the equivalent statement that assets should remain in excess of accrued benefits. Even this may not provide complete protection to plan participants in case of a plan termination. This is because the liability for accrued benefits is measured on the basis of the firm's continuance; thus pensions are deferred to the expected date of retirement. In the case of a plan termination, layoffs and voluntary terminations of employment may occur on or about the plan termination date; these occurrences would tend to increase the number of early retirements above the expected number. Where early retirement is heavily subsidized, the liability upon plan termination may easily be greater than that for accrued benefits. Thus, the value of accrued benefits should be reviewed as a minimum measurement of benefit security.

The next point to be considered is whether this criterion is to be satisfied each year or on an average basis. Three items argue powerfully that the test should be applied on a year-to-year basis:

- The primary argument is made from the viewpoint of the plan participant. The purpose of maintaining an actuarially sound fund is to ensure benefit security. Security is imperiled should the test be failed in any year.
- From the viewpoint of the plan sponsor, avoidance of increased plan insurance premiums may be a factor. Currently PBGC premiums, which represent compensation to the PBGC for assuming the risk of paying guaranteed benefits in case of a plan termination, are charged in part based on the relative amount of exposure to the PBGC for unfunded benefits. In essence, underfunded plans are taxed at a higher rate than well-funded plans.
- The value of accumulated plan benefits as measured for accounting purposes, while different from the value of accrued benefits, is nevertheless a closely related measure. Under SFAS 87, companies whose assets are less than the value of accumulated plan benefits must recognize a liability on the balance sheet. To the extent that this underfunding is not attributable to unamortized effects of plan amendments, no intangible asset may be set up to offset this liability. For an employer that has been contributing in excess of the SFAS 87 expense, this will generate a large swing in equity, because of the fact that recognition of a liability where there is no offsetting intangible asset will also cause the cancellation of any prepaid pension asset. This could cause inadvertent violation of debt covenants and other bargaining arrangements and increase the company's cost of borrowing. Should a subsequent upswing in the market value of the fund cause the asset value to once again exceed the value of accumulated plan benefits, the prepaid pension asset is restored, generating another large change in the balance sheet. Thus testing that the assets exceed the accumulated plan benefit obligation in each year would appear to be the course of prudence.

Having seen the arguments that assets should remain in excess of accrued benefit liabilities once they have attained this status, it remains to translate this statement

into a practical application of this criterion. This is to say that we must determine an acceptable probability that represents reasonable certainty of this event's occurrence. For this analysis, we will assume that this *confidence interval* is such that an event with a probability of 90% or greater will represent reasonable certainty of the occurrence of that event. Thus if there is a 90% chance that assets will be in excess of \$20 million on January 1, 2000, we will accept the assumption that assets actually do exceed \$20 million. In actual experience, management would determine the appropriate level of certainty.

Our criterion should then be testable as follows:

- Stochastic modeling of assets and liabilities can be performed using Monte Carlo or other techniques, based on proposed investment allocation choices, actuarial funding methods, asset valuation methods and legal restraints on funding the plan, so that ranges of future financial numbers can be evaluated.
- Among the products of the study should be the range and probability of contributions, expense and the ratio of market value of assets to present value of accrued benefit.
- The test of the criterion will then be to ensure that market value of assets exceeds the present value of accrued benefits at least 90% of the time. Assets should meet this test in each projected valuation year.

To gain management's acceptance of the responsibility for committing to the results of the study, it is imperative that the underlying population and salary data reflect management's business plan. However, useful information may be produced by analyzing the sensitivity of various other assumptions.⁶ Most importantly, what are the effects of a different population growth assumption? Soundly funded private plans should not depend on contributions from new entrants.

REASONABLE STABILITY IN AND UNDERSTANDING OF ANTICIPATED CONTRIBUTION PATTERNS

Our third criterion calls for the adoption of a funding policy that produces stable contributions. This may conveniently be broken into two subcriteria, the first of which is that the funding policy chosen should not produce significant year to year increases unless management is explicitly informed and accepts the likely effects of this arrangement. There are several reasons for this:

- Deviations of actual from expected experience over the projection period will vary actual funding from the pattern generated by the projection

⁶McGinn, Daniel F. "Actuarial Forecasts of Pension Plan Costs for Corporate Management," *Proceedings of the Conference of Actuaries in Public Practice*, pp. 141-152, xxviii 1979.

model; a projected pattern that produces increasing costs may be aggravated by future deviations in experience leading to unreasonable and excessive costs and therefore to termination or curtailment of the plan. Thus the adoption of a significantly increasing cost pattern may be seen to directly affect benefit security.

The question remains, What constitutes a significant pattern of increases? The employer must be shown the implications of alternative cost patterns and indicate an acceptable level of cost increase. Many employers would be unwilling to accept a pattern showing increases that would double the contribution requirement over the period of study. Depending on the degree of risk assumed in the investment portfolio, annual contributions may be shown typically to fluctuate from 10% to 50% due to investment risk alone. If random deviations due to all experience are assumed to raise the contributions by 50%, then this would argue that for this type of employer, the cost pattern should not show an increase over the projection period in excess of 50%. This is equivalent to an average annual increase of 4% or less.

- The environment in which the company operates is also important. For regulated entities, use of a funding method that develops a level pattern of contributions with minimal opportunity for company initiation in varying contributions from year to year is usually preferred. Typically, rate commissions want to ensure that each generation of ratepayers bears its own costs—as opposed to deferring or accelerating charges. Companies in cyclical industries may prefer funding methods that generate a large range of contributions, to maximize tax effectiveness of contributions.

The above considerations may directly affect the choice of actuarial funding method used under ERISA. All legal funding methods under ERISA may be divided into two separate families. One family of methods allocates funding for active employees based on the cost to purchase the benefit that actually accrues during the year; the other family spreads funding for the total projected benefit as either a level amount or a level percentage of pay. Members of the first cost family generally show a rising pattern of cost as the population of a plan matures. Thus members of the first cost family have been criticized as requiring greatest contributions when the plan sponsor is least likely to be able to afford the contributions (that is, when the plan population is super-mature). On the other hand, the level funding method family has been criticized as requiring initial contributions that are too large and lead to an excessive level of assets for an ongoing plan. Note, however, that overall contributions under level funding methods are lower (if not adjusted for the time value of money), as a relatively greater percentage of benefits are funded through investment returns (since a greater amount of money is invested over a longer period).

Our second subcriterion under stability of contribution is that the contribution should not demonstrate a great degree of volatility; a large amount of volatility in

pension contributions may interfere with the other business planning processes such as projected cash flow, budgeting, and so on. Similarly, volatile pension expense may be difficult to defend to shareholders, financial rating agencies or regulators. Several methods exist to induce lessened volatility in contributions. These include:

- Asset-smoothing techniques, which use an average value of assets rather than the most recent value
- Infrequent changes in funding and benefit policy.

Other methods for restricting volatility could include the use or avoidance of various asset classes. However, the sponsor's fiduciary duties may conflict with the use of asset investment strategies that are targeted solely at stabilizing costs, as opposed to strategies that are aimed at other goals that might be viewed as equally or more important to plan participants. Within these limits, however, many sponsors have joined investment selection criteria with other criteria in determining funding and investment policy.

ADOPTION OF A RATIONAL AND SYSTEMATIC ACTUARIAL METHOD

Management must operate tax-qualified plans within the constraints of ERISA and the Internal Revenue Code. Thus, funding methods chosen must comply with the requirements of ERISA. Periodic reevaluation of the method is important, but frequent changes in methods destroy the ability to measure progress along the previously chosen plan.

As with any long-term plan and commitment, the ability to measure progress along previously identified goals is a key indicator of likely success or failure. Given the extremely long time horizon of the pension process, ability to measure progress on a comparable basis over extended time periods becomes even more important. Any decision to change methods should not be undertaken lightly—management should not only look at the cost pattern for a predetermined scenario, but also examine realistic projections of the chances of good and bad experience under a funding method.

CONCLUSION

This paper recommends criteria for measuring the adequacy of proposed funding policies. The proposed criteria utilize stochastic analyses of the funding process as well as an analysis of the firm's management approach to pension funding. By combining management review and commitment to the pension program with stochastic decision support analysis, management and, in the end, participants, can be adequately informed about the financial support needs of the pension program.

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