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ADEQUATE FINANCING OF RETIREMENT PLANS

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Panelists: C. DAVID GUSTAFSON*
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Recorder: SUSAN M. SMITH

- o What constitutes an adequately funded plan?
It depends on your viewpoint. This panel discussion will examine adequate funding from four different perspectives:
 - Actuaries (and plan participants)
 - Investors (and plan sponsors)
 - The PBGC
 - The IRS
- o Each panelist will address:
 - Benefits to be considered
 - How liabilities should be measured
 - How assets should be valued

MS. SUSAN M. SMITH: We have a couple of changes in the panelists from the names in your program, so let me introduce each panelist and tell you a little about each of them.

On the far left is Mr. C. David Gustafson. Dave is Special Assistant to the Executive Director of the Pension Benefit Guaranty Corporation. He is going to share some insights into drafting the new variable premium contained in Omnibus Budget Reconciliation Act 87. On his right is Mr. Michael H. Trenk, who is an Associate with Morgan Stanley & Co. He has been working with Morgan Stanley for the last year and one-half in their Pension Group. On his right is Mr. James E. Holland, Jr., who is Chief of the Pension Actuarial Branch of the Internal Revenue Service. I am pleased to have each of these panelists here.

There isn't just one answer to the question "What is an adequately financed retirement plan?" Any answer given depends a great deal on the background of the respondent. The Society of Actuaries Committee on Pension Principles and Related Research is currently drafting a paper on this topic. We've been struggling mightily, so I think this will be an interesting session.

Being moderator, I have the opportunity to go first. I'm taking a slightly different point of view, and I do want you to understand that this is only my opinion. I am not attempting to follow what is current practice, nor necessarily what is in current laws and regulations. I'd just like to answer the question

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"What might be considered a measure of whether or not a plan is adequately funded." I'm not going to talk about how one becomes "adequately funded." We first have to know what the goal is, and then we can figure out how to get there over a period of time that seems reasonable and meets our other constraints in terms of cash flow and earnings.

The first thing we want to look at are the benefits that should be considered in evaluating whether a plan is fully funded.

In every case, you are going to want to look at those benefits that are in pay status on the valuation date.

For active participants, which benefits should be considered?

- o For retirement benefits, I think we are all comfortable looking at those benefits which are accrued to the valuation date under the plan. I think most of us are now comfortable including the value of any supported early retirement factors for individuals who are currently eligible to retire with them or could potentially become eligible for them at retirement with continued service and/or advancing age.
- o With respect to death and disability benefits, I think I would include them in my measurement for active participants only if they would vest upon termination of employment on the valuation date.
- o Next are temporary supplements. While these benefits aren't always required to be a part of the PBGC plan termination liabilities, I think that they should be included when trying to ascertain whether a plan is adequately funded. I think, too, you will want to include the value of temporary supplements with respect to both those actives who are currently eligible and those who could potentially become eligible for them.
- o Plant shutdown or other contingent benefits should be considered, but I'll get to how we might consider them when we talk about assumptions in a moment.
- o Similarly, the present value of postretirement cost of living increases should be considered, in my opinion.
- o Ad hoc retirement benefit increases should be considered, only if management feels that there is a real commitment there.

Now that we've identified which benefits we want to consider, let's look at how we might define these benefits.

- o In the retirement benefit area, we want to look at the plan's formula for calculating accrued benefits. For this purpose, in my opinion, we should look at the following factors, to the extent that they are applicable in the plan's formula:
 - Pay to date; I'm not suggesting that we look at projected pay for this purpose.
 - Service accrued to date that is used to calculate accrued benefits.

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- Social Security benefits based on the current law, with earnings either projected to be zero or constant, depending on what the plan provides. The current Social Security Wage Base should be used in the case of an excess integrated plan.
- For collectively bargained plans, I'd go a little further than just looking at the benefit level that is currently in effect. I would look at the ultimate benefit level in the current contract. To me there is a commitment there, and participants have an expectation of receiving that higher benefit level. Therefore, I'd like to take that into account in seeing whether a plan is adequately funded.
- With respect to 415 dollar limits and the \$200,000 pay cap that will come into effect in 1989, I think these should be at the current level on the valuation date, i.e., not indexed for this purpose.
- With respect to eligibility for subsidized early retirement benefits, I think you will want to look only at those subsidies that are in the current plan and the current eligibility requirements for them.
- o With respect to death and disability benefits, if they are to be measured for this purpose, they should be based on the plan's current provisions for active participants.
- o Temporary supplements are like benefit levels in a collectively bargained plan; if they are to be considered, and I think they should be, we should use the ultimate rate or level of those benefits in the existing contract, not just the one that's in effect on the valuation date.
- o For cost of living adjustments (COLAs), you should look toward the plan's provisions. If there is a formula for the COLA, you must try to make a reasonable assumption with respect to the future behavior of the dependent variable.
- o Ad hoc retiree increases should be based on a reasonable assumption if there is enough of a commitment to require that these be included in the measurement.

We have identified a number of benefits to be considered and have some rather simple rules to follow in defining each of these benefits for purposes of testing whether a plan is adequately funded. Now let's see how we might determine the present value of (or liability for) these benefits.

I think we should take a unit credit approach in valuing these benefits, using the assumptions listed below to the extent that they are applicable:

- o Interest rates: I think the interest or the discount rate should be something which is close or comparable to current annuity purchase rates or settlement rates. The only exception to this would be the situation where a plan has a very heavily subsidized lump sum option. If the lump sum value is greater than the liability on current purchase rates, then the higher lump sum value should be used as the present value of these benefits, in my opinion.

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- o Mortality: There has been a lot of improvement in mortality in the last 10 to 15 years. These improvements can increase liabilities, and I think an up-to-date mortality table, such as the 1983 Group Annuity Mortality Table, should be used in testing funding adequacy.
- o Withdrawal rates: I'm suggesting that no turnover be assumed. This is conservative, but I'm looking for somewhat of a conservative measure.
- o With respect to disablement, you don't need a decrement, unless of course, you are trying to value a disability benefit. I wouldn't go through the complications, unless there was a rather liberal disability benefit, and there had been, in the past, rather frequent utilization of it.
- o With respect to retirement decrements, the rates assumed for retirement should be reasonable. If possible, they should be based on actual experience, again looking ahead to future trends. They should probably range over the possible retirement ages 55 to 65, maybe even 70 these days.
- o Plant shutdown: Do you assume one never happens, or do you assume one will happen with 100% probability? A plant either is shutdown or it isn't; that's the problem. In the situation where you have a pension plan covering employees who are working in a number of different plants, I think that it is reasonable to assume something between 0% and 100% as the probability of any plant shut-down taking place for testing funding adequacy. This would provide some liability for these benefits, assuming that some, but not all, plants are shutdown. On the other hand, if you have a plan covering employees working in only one plant, the prudent and conservative thing to do in making this measure would be to assume 100% probability of a plant shutdown. This is not anything that is required by the government at this moment. It's just a measure that I am suggesting be used to determine whether or not your plan is adequately funded at this time, from a participant's perspective.
- o With respect to COLAs, you are going to have to make some assumptions with respect to future inflation or whatever else the formula is based on.
- o Regarding 415 dollar limits and the \$200,000 pay cap, I am suggesting that these not be indexed. To the extent that a plan really is terminated and benefits are purchased, benefits in excess of current dollar limits and the current pay cap could not be provided from the assets of the qualified plan. Therefore, indexed amounts shouldn't be considered in testing funding adequacy.
- o There are some other assumptions with respect to the percentage of individuals assumed to be married, if you have spouse benefits and the age differences. These assumptions should be reasonable. The form of payment should be the normal form under the plan, unless there's some optional form that might be heavily subsidized, and therefore, heavily utilized, because there is cost there that you will want to take into account.

So we've identified the benefits that we want to consider and have defined the benefits and the assumptions and methods to use to value them. The next thing we need to do, once we have the present value of the benefits, is to see how much we have in the way of assets. How far are we towards our goal? Here I

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think we should use market values, except you may want to reduce them somewhat if you have some types of investments that are not very liquid.

Remember, though, you can amend a plan to cease further benefit accruals, and avoid having to go out and liquidate the portfolio immediately. So an argument can be made that market value is the best measure at any point in time in testing funding adequacy.

In summary, if we are comparing the present value of benefits to be considered with the market value of assets and find we have sufficient assets to cover these benefits, I think, from a participant's viewpoint, that you can say the promises are fairly secure. We all know, however, that the fact that these are secure at one point in time may not be true tomorrow. So, it's always nice to have a little bit of a cushion in there. In other words, a market value of assets greater than the present value of benefits is desirable. Of course, for those plans which have not yet met the goal, it would be my recommendation that a funding policy be adopted to get there over a relatively short period of time, because the commitment has been made to provide those benefits and the expectation is there on the part of participants that they will be provided.

Now, it's time to ask Dave if he will tell us what adequate funding means from a PBGC perspective.

MR. C. DAVID GUSTAFSON: From the PBGC's perspective, I think it's helpful to begin any review of the adequacy of funding with a review of the recent history of the funding standards and the evolution of these standards.

Since the inception of ERISA, the funded ratios of underfunded terminated plans have not improved. Two well publicized terminations illustrate the weaknesses in these standards. In July 1985, the Allis Chalmers UAW Pension Plan was terminated with \$175 million in benefit liabilities and assets for only one month of benefit payments to retirees. Yet the sponsor had always contributed at least the ERISA minimum, had never obtained a funding waiver, and had used middle-of-the-road actuarial assumptions and methods. In September 1986, the PBGC was forced to assume responsibility for the LTV Republic Salaried Retirement Plan, which had \$7,700 in cash to cover its \$230 million in benefit liabilities. This plan, too, had been in complete compliance with ERISA funding standards and had not been granted a funding waiver.

These and many other terminated plans have attained their desperate financial condition due to a number of weaknesses in the ERISA standards. In theory, ERISA minimum funding standards should assure improved funding progress in terms of reducing unfunded liabilities. Current service accruals (i.e., normal cost) must be funded and a proportion of unfunded past service liabilities must be funded each year until fully amortized. In practice, however, four factors have disrupted this theoretical funding progress. These four factors are:

1. new, unanticipated accrued benefit liabilities created by frequent, significant benefit increases;
2. experience losses generated by unanticipated, adverse experience, or overly optimistic actuarial assumptions (e.g., interest and retirement rates or ages);
3. insolvency caused by significant distributions; and

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4. nonpayment of required contributions.

New, unanticipated accrued benefit liabilities created by frequent, significant benefit increases have typically been found in the flat benefit, hourly plans. As of September 30, 1986, approximately 80% of the PBGC's deficit could be attributable to steelworker and autoworker plans, most of which were flat dollar benefit plans. There were not adequate provisions under ERISA to advance fund these continuous increases.

The second deficiency in the minimum funding standards was delayed recognition of experience losses generated by unanticipated adverse experience or overly optimistic actuarial assumptions (for instance, interest and retirement age and rates) that caused funded ratios to decline. In particular, experience losses is due to shutdown benefits have caused the PBGC a good deal of difficulty in the past. From the September 30, 1986 annual statement, we estimate that about 25% of our deficit could be attributable to benefits arising on shutdown. That would account for \$1 billion out of a \$4 billion deficit at that time. Also, we have found, and continue to find, that a plan which is deteriorating seeks out assumptions and methods that clearly minimize contribution requirements and may not be reflective of what the actuary really anticipates experience under the plan to be.

The third weakness in the standards was the lack of protection against insolvency caused by significant distributions. The LTV Republic Salaried Plan that I referred to earlier (with \$7,700 in cash upon termination) had paid out, I believe, \$180 million in lump sums to terminated participants over the three-year period prior to termination. These payments left virtually nothing in the fund.

Finally, we have experienced over time, the nonpayment of minimum funding contributions. This has caused the PBGC substantial difficulty. In particular, in major terminated plans, we have found that approximately 35% of the underfunding could be attributed to either unsecured waivers of required contributions or just plain nonpayment. The fact that there was a lag with regard to the contribution due dates made it easier for plan sponsors to simply never put the money into the plans.

In trying to address these problems, we tested many alternatives. We began with a wide variety of amortization periods applied to the ERISA minimum funding standards for funding projected benefits for ongoing plans. These initial alternative runs did not consistently improve the funded status of currently underfunded plans and often affected a large portion of plans for which funding progress was adequate. Average working lifetime concepts were also tested and found to be unsatisfactory for a variety of reasons. For example, they did not satisfactorily address a high retiree liability to active liability situation. They also created some anomalies when using select and ultimate or attained age withdrawal rates.

In the initial tests, it became clear that the only effective approach to the four cited weaknesses in the ERISA standards was to address directly each deficiency. This conclusion led us to focus on the funding of accrued benefits on a termination basis. Also, the initial test results reinforced the objective of properly distinguishing among the various degrees of underfunding and liability maturity.

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Development of the new standards required testing dozens of alternatives. An open-group forecast valuation model was utilized that permitted sensitivity testing of such variables as changes in plan population, actuarial cost method, actuarial assumptions and plan experience factors. Major events such as a plant shutdown, granting of a funding waiver, and significant investment fluctuations were also analyzed in the model.

The major focus of the model was devoted to results that utilized the 1985 Pension Actuarial Cost Method Analysis Study completed by the Academy's Committee on Pension Actuarial Principles and Practices. Although all of the study's participant groups were observed in the model, particular attention was given to Study Groups I and A in the analysis. It should be noted that we valued the termination liabilities using plan funding assumptions to avoid year-to-year volatility in the funded ratios. (The model was developed, refined, and run literally thousands of times by Rich LaBombarde of Milliman & Robertson who is assisting with the overheads today. I'd like to thank Rich for his invaluable contribution to this project.)

The results of the changes made by the Pension Protection Act are shown in Graph I here for Group I.

Group I, in the Academy Study, is the old, long-service, hourly group, has a flat benefit formula under the plan, has an active life population with high average age and service, an initial active to retiree ratio of about 1 to 1, and a declining work force. The upper part of the graph is the progression of funded ratios. We started with three different initial funded ratios -- 25%, 50% and 75% -- on a "benefit liability" basis as defined under the Pension Protection Act. The lower line in each case for this particular group represents what would have resulted under pre-Pension Protection Act Section 412 requirements. In other words, the funded ratio for the plan that was 75% funded to start with decreased over 20 years to about 45% funded. The upper lines in each of these cases demonstrate the funded ratios under the new requirements of the Pension Protection Act. The two most effective changes are the addition of the Section 412(l) requirements for benefit increases and shortening the amortization of gains and losses to 5 years from 15 years. As you can see, the funded ratios for Group I gradually improve over the 20 year period of time to about an 80-90% funded level.

Underneath the top graph, in between the two charts, there is a designator of which rule applies in a particular year, the B being the deficit reduction contribution rule -- the 412(l) rule, and A, the regular 412 requirements. You can see that in years 19 and 20, the rules revert back to the regular 412 contribution.

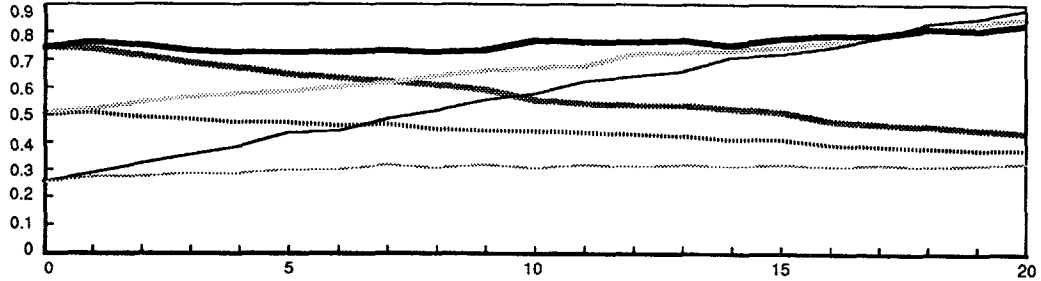
Down below, although the scale could be a little bit broader, is the impact on the cash contributions. Under the PPA rules, we found for Group I that contributions increased by about 40% at most, and then tapered off after about the 12th or 13th year back to where they were on a pre-Pension Protection Act basis.

Graph II shows what happens to what we call the "normal" group. Group A in the Academy Study, the normal group, has a final pay salary offset formula, an initial active to retiree ratio of nearly 7 to 1, and a mature, stable workforce that is projected to increase over time. As you can see, there is very little, if any, impact from the new PPA standards. The differences here are primarily

COMPROMISE FUNDING OPTION (STANDARD)

ACADEMY GROUP I (1) EAN (F8V111 12/21/87)

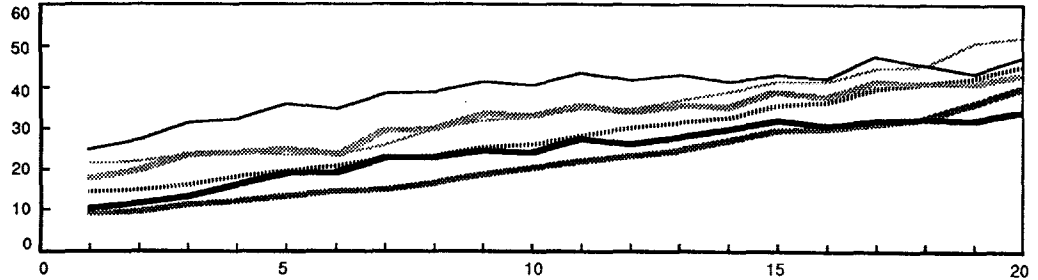
BENEFIT LIABILITY FUNDED RATIO



75% plan, prior law	50% plan, prior law	25% plan, prior law
75% plan, deficit reduction rule	50% plan, deficit reduction rule	25% plan, deficit reduction rule
75%: B B B B B B B B B B B B B B B B B B A A	50%: B B B B B B B B B B B B B B B B B B A A	25%: B B B B B B B B B B B B B B B B B B A A
Codes: A = Regular IRC 412		B = Deficit reduction contribution rule

CONTRIBUTIONS

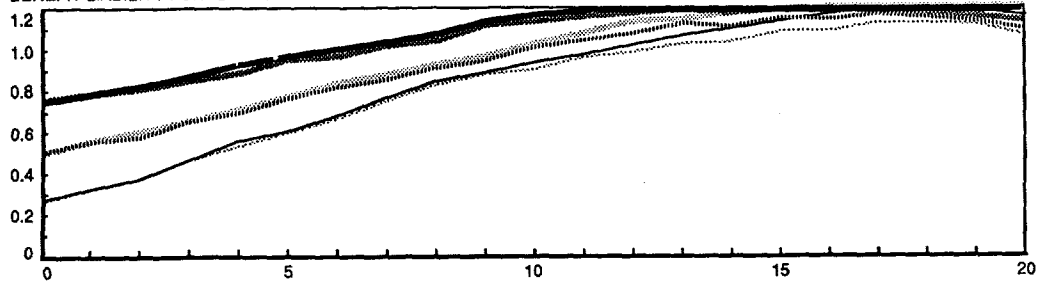
DOLLARS



COMPROMISE FUNDING OPTION (STANDARD)

ACADEMY GROUP A(1) EAN (F8V1A1 12/21/87)

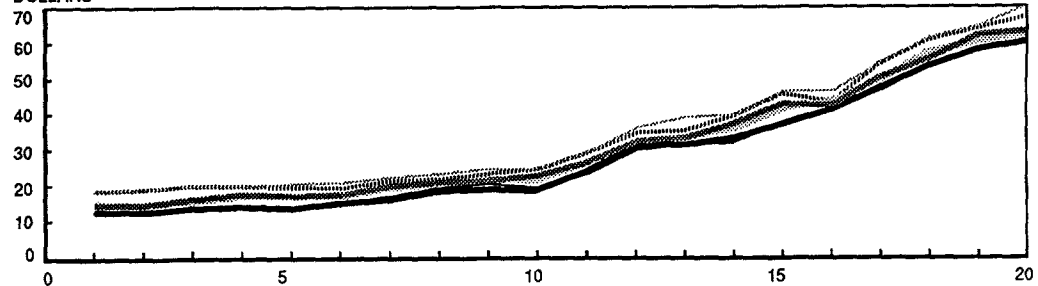
BENEFIT LIABILITY FUNDED RATIO



-----	75% plan, prior law	-----	50% plan, prior law	-----	25% plan, prior law
-----	75% plan, deficit reduction rule	-----	50% plan, deficit reduction rule	-----	25% plan, deficit reduction rule
75%:	A A	50%:	A A	25%:	A A
Codes: A = Regular IRC 412			B = Deficit reduction contribution rule		

CONTRIBUTIONS

DOLLARS



GRAPH II

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due to the shorter amortization of gains and losses. We tried not to affect plans that didn't need improvement under existing E412 contribution requirements. The progression of funded ratios under these plans was quite satisfactory under pre-PPA standards.

Under the ERISA minimum standards, the funded status of Group I declines steadily over the 20-year period, while Group A's funded status steadily improves. Under the revised standards, Group I's funded ratios show significant and steady improvement. As I stated earlier, the new minimum funding requirements under the Pension Protection Act have relatively little effect on funded ratios for less mature, salary related plans such as with Group A. ERISA minimums are adequate for these plans.

Under the Pension Protection Act standards, the greatest impact will be felt by flat benefit plans. Some have suggested that merely changing the regulations, specifically Revenue Ruling 77-2 that prevents flat benefit plans from anticipating future benefit increases, would have been an adequate response for these plans. Apart from the difficulties in crafting such a change that would not be abused from a maximum deduction viewpoint, permitting anticipation of such changes in benefit levels provides no assurance that the contributions will reflect the future increases. There are techniques currently available for increasing contributions (e.g., change the funding method, reduce amortization periods) that could be, but generally are not, used by these plans. The PBGC's experience with terminated flat benefit plans shows that few sponsors make the maximum deductible contribution.

Another approach to strengthening the funding standards was suggested by a special Task Force of the American Academy of Actuaries. The Task Force distributed a report in November 1987 which included the following statement: "In general we believe the current rules on minimum funding provided a workable set of requirements. Several of the proposals have suggested a shortening of the amortization period for past service liabilities. We could support some shortening of the amortization period for future benefit increases (hopefully no shorter than twenty years but certainly no less than fifteen years)."

In the PBGC's modeling, we found that not much happens when the period is shortened to 15 years for benefit increases. Although the approach recommended by the Task Force was not seriously considered by congressional staffers studying the issue, the results would have been unacceptable for a variety of reasons.

First, the principle was adopted by most congressional staffers that the funded ratio should improve steadily over time. Second, most felt that all plans should become fully funded for termination liabilities within a reasonable period. This position was enunciated in a joint statement issued by Senators Quayle and Metzenbaum in October 1987, at the Senate Labor and Human Resources hearing on minimum funding standards and other ERISA reforms. That statement said, "We are both concerned that substantially underfunded plans, such as those 25-50% funded, should be funded to meet their pension promises. The initial analysis of the new funding rule in this bill showed that the most poorly funded plans steadily improved to reach about 70% of needed funding in 10 years and 100% in twenty years. Both of us believe this to be an adequate funding rule."

The Task Force's proposed reduction in the amortization period for future plan changes to 15 years would also have failed a couple of other objectives. One

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such objective was to solve the four specific problems described above without affecting plans for which the ERISA standards are adequate. Clearly, the suggested approach would require additional contributions from all plans and thus could also have a negative impact on tax revenues. Finally, there was the objective of improving the funded status of currently underfunded plans while distinguishing among various degrees of underfunding and liability maturity. The Task Force's recommendation was not consistent with this objective either. Returning to the four major problems in the ERISA funding rules, the Pension Protection Act dealt with these issues with varying degrees of success. The new Code Section 412(l) rules address the first problem of unanticipated benefit increases. Although a 100% funded ratio was not attained within 15-20 years, as we had hoped, the new requirements significantly improve funded ratios over prior law. The new 412(l) requirements also will ultimately impact only 2-3% of all plans, and those are the very plans that need improved funding ratios the most. The same 2-3% of all plans is also likely to be affected by the new security requirement for benefit increases when funded ratios are below the statutory threshold.

The second problem was addressed by shortening the amortization period for gains and losses to five years, as well as in the new rules for funding unpredictable contingent event benefits.

The third concern, that is the absence of a solvency requirement, was not addressed. Although there was a cash flow rule in a number of the Committees' bills, the rule was deleted at the last minute for reasons of compromise and simplicity.

The fourth concern -- the nonpayment of required contributions -- was addressed by the Pension Protection Act very thoroughly. This was accomplished through the quarterly payment requirement, the liens that can arise upon nonpayment of these contributions, the enhanced bankruptcy status of unpaid contributions, and the tougher waiver standards.

Now let's turn to the question of which benefits should be included in testing funding adequacy from a PBGC perspective. Susan enumerated a number of these. In the chart, we looked first at those benefits that, on a pre-Pension Protection Act basis, were included in Priority Categories 1 through 6.

We asked ourselves, "What would the PBGC have required to be in the annuity purchase if any of these provisions existed in the plan in an asset reversion case?" We looked at these benefits, not only with regard to what was in effect during pre-Pension Protection Act days, but also in terms of what will be in effect under the new definition of "Benefit Liability," which is now defined by the IRS consistent with Code Section 401(a) (2) rather under in Title IV of ERISA.

In determining what has to be provided under each of these various benefits, we were operating under a number of principles.

First, we included only vested and nonvested accrued benefits. We excluded the ancillary benefits not protected by the anti-cutback rules. For example, temporary supplements that are not payable for life and are, therefore, not retirement-type subsidies were excluded.

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Second, although some in-pay-status benefits may be amended out at plan termination (i.e., they are not protected by 411(d) (6)), the PBGC has adopted a policy that in-pay-status benefits should be included upon plan termination.

Third, benefits that are payable only upon the occurrence of a post-termination event, such as shutdown, death, or disability benefits, are not included. Thus, those event-contingent benefits where you must wait for something to happen (particularly something that may be within the control of the plan sponsor) should not be included in this group of benefits. However, those that arise merely due to the passage of time, for instance aging or additional service, should be included in this group of benefits.

The benefit on Graph III called "CREEP" is found in steelworker and autoworker plans. It occurs when someone is laid off, generally because of a shutdown, and additional service accrues beyond the date of the employee's termination up to, generally, two years. Since many shutdowns occur just prior to plan termination, we are faced with a problem of what to do when someone is accruing service for both eligibility and benefit computation purposes when the plan terminates. We have taken the position that, when a shutdown has occurred prior to the date of the plan termination, and the plan was fully funded, service would continue for eligibility purposes, such as for eligibility for 30 and out, but not for benefit accrual purposes. For a post-DOPT (Date of Plan Termination) shutdown, a benefit that is contingent upon such an event is not one that we think is appropriately included.

In the "Comments" column on Graph III, we have reflected only what was included as either a Current Liability (CL) or a retirement-type subsidy in both the Statement of Managers for the Pension Protection Act and in the Retirement Equity Act (REA). Interestingly, the Statement of Managers included in Current Liability the post-DOPT entitlement for Social Security supplements, whereas the REA suggested that this was not a retirement-type subsidy. Social Security supplements and subsidized survivorship benefits give us the greatest difficulty in determining whether they also belong in "Benefit Liabilities" under Title IV.

I have also interspersed comments on Graph III about whether there is an annuity purchase problem on plan termination. We continue to hear from insurers that they have great difficulty pricing COLA provisions as well as qualified disability benefits. Many of them are declining to quote because of the unknowns involved in these two areas.

Under the benefit shown as "lump sum > p.v. annuity" on Graph III, the alternative form of distribution is the one in PBGC's sufficiency regulation which permits you to use the present value of the benefit payable at normal retirement age in testing sufficiency. It suggests that you have to test sufficiency using the more favorable of the plan rates or PBGC rates at date of distribution, in lieu of purchasing an annuity. However, plans have purchased annuities which have a lump sum option for deferred vested participants. They, in essence, have reproduced what was in the plan prior to termination. As an example, they've maintained in the annuity purchased a lump sum option for the participant who is 35 but wants to wait to elect the payment form. This option presents an interesting pricing issue for insurance companies to deal with, since it is problematic as to when that participant's lump sum will be withdrawn and the interest rates that will have to be applied at that point.

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GRAPH III

	Pre-Pension Protection Act Priority <u>Category 1-6</u>	<u>Comments</u>
Social Security supplement and 13-week vacation pay		
Pre-Date of Plan Termination (DOPT) pay status	YES	
Post-DOPT entitlement	NO	Included in CL but is not retirement- type subsidy
Lump sum death benefit	NO	Not retirement-type subsidy
QUIPSA subsidy (Post-DOPT death)	NO	Included in CL
Qualified disability benefit (Post-DOPT disability)	NO	Not retirement-type subsidy and is annuity purchase problem
Lump sum > p.v. annuity		
Alternate form of distribution	YES	
Optional annuity form	YES	
Shutdown benefit		
Pre-DOPT shutdown		
E.R. subsidy	YES	
Temporary supplement	YES	
Post-DOPT shutdown		
E.R. subsidy	NO	Not included in CL
Temporary supplement	NO	Not included in CL and is not retirement- type subsidy
Window period open at DOPT (Elected post-DOPT, E.R. subsidy)	YES	
CREEP provision open at DOPT		
Pre-DOPT shutdown		
Eligibility	YES	
Accrual	NO	
Post-DOPT shutdown	NO	
C.O.L.A. provision (Post-termination increase)	YES	Annuity purchase problem

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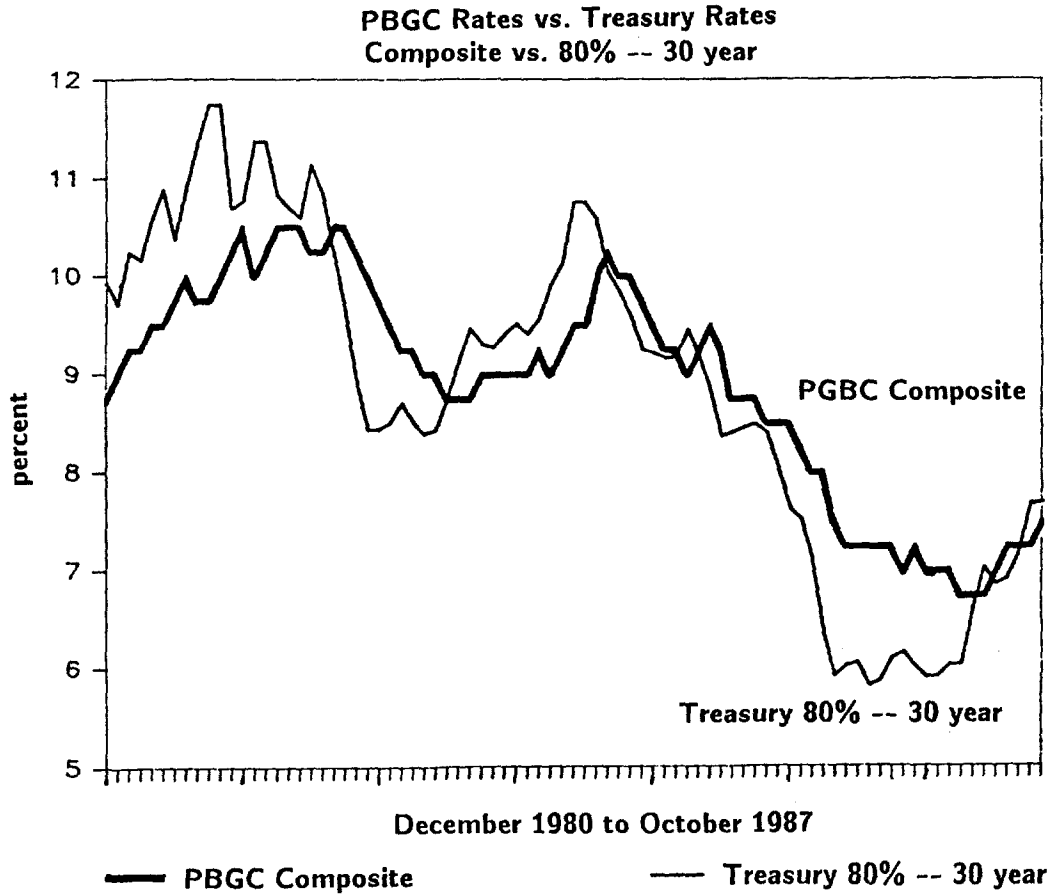
Part of the Pension Protection Act that has caused a lot of consternation has been the specification of a variety of interest rates. An interest rate corridor was mandated for determining the value of Current Liabilities, and an interest rate was specified for determining unfunded vested benefits for variable rate premium purposes. The need to specify interest rates evolved because feedback from employers during drafting was that it would be unfair to let PBGC establish its own interest rate for variable rate premium purposes, and thereby, potentially manipulate the income derived from these premiums. We did not concur in that conclusion, but we were asked to suggest a surrogate or a substitute rate for the PBGC interest rate in determining the amount that should be payable under the variable rate premium portion of the Pension Protection Act.

MS. SMITH: For clarification, was that the immediate PBGC rate or a composite of the immediate and deferred PBGC rates?

MR. GUSTAFSON: I think I can best respond to your question by reading a brief internal memo that comments on how this evolved and by showing Graph IV. The memo says:

It is still our belief that the PBGC rates are set objectively. Hopefully, Congress will agree to directly reference these rates in the variable rate premium legislation. (This memo was written prior to the passage of PPA). Congress has already used this rate in the Internal Revenue Service Code for controlling lump sum payments, and FASB views this rate as an objective measure for valuing pension liabilities for financial statement purposes... We have studied the rates that might match PBGC's immediate rate less 50 basis points. That is equivalent to the composite rate for the liabilities for which PBGC is trustee. (Composite here clearly means the mix of retired and deferred lives.) However, the composite rate for ongoing plans, which have a smaller percentage of their liabilities for participants in pay status, is probably lower. If the Committees feel that they must have a proxy for PBGC's composite rate, then we recommend using two-thirds of the Moody's Corporate Bond Yield Average rate plus 50 basis points. The variance of the difference of this series with the composite rate since 1980 on a monthly basis is 16 basis points. The differences have ranged from +38 to -120 basis points. If the Committee desires a proxy for PBGC's composite rate that ties to a government security, the best we have found is 80% of the yield of 30-year Treasury bonds. This series is clearly less preferable as the variance of the difference of this series with the composite rate since 1980 -- 75 basis points -- is much greater, and the differences range from +163 to -199 basis points. The 30-year bond rate is that issued in the Federal Reserve Statistical Release for 30-year constant maturity. It is based on a constant yield curve constructed by the U.S. Treasury.

Our initial recommendation of the Moody's Corporate Bond Rate was not accepted because there was still a sense that it could be manipulated. Therefore, the 30-year Treasury rate was used. As you can see from the graphed results, over the most recent eight-year period, there has been wide variance relative to the PBGC composite rate. That variance continues to cause us some difficulty.



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How did we then get from the 80% variable rate premium figure to the Current Liability interest rate corridor? Both the Ways and Means and the Finance Committee bills had an interest rate corridor which was there to protect the revenue generated from the OBRA change in the full funding limitation. There were difficulties with the way in which those corridors were defined. So what was adopted at the last moment was 90% to 110% of the four-year weighted average of the 30-year Treasury rate. The primary purpose of the corridor was to protect the revenue that was to be derived from the change in the full funding limitation.

Graph V shows a distribution of plan funded ratios produced by the Pension and Welfare Benefit Administration that illustrates where plans were on December 31, 1986.

GRAPH V

FUNDING STATUS OF SINGLE EMPLOYER DEFINED BENEFIT PLANS, 1986

<u>Funding Ratio</u>	<u>Percent of Plans</u>	<u>Percent of Assets</u>
Less than .25	1	1 > 1/2
.25 - .49	2	1
.50 - .74	6	4
.75 - .99	10	7
1.00 - 1.09	5	7
1.10 - 1.24	9	7
1.25 - 1.49	18	25
1.50 - 1.99	27	32
2.00 or higher	<u>21</u>	<u>16</u>
Total:	100	100
Total assets - \$794 billion: Total plans - 22,500		

Source: DOL/PWBA/Office of Research and Economic Analysis.
Distribution only includes single employer defined benefit plans with 100 or more participants.

Estimates are for December 31, 1986.

Number of plans with fewer than 100 participants - 185,000

Assets in plans with fewer than 100 participants - \$82 billion

Liabilities were derived using the PBGC immediate rate of 7-1/2% at that time. This particular table was used by the revenue estimators as a primary source for determining the revenue to be derived from the change in the full funding limitation.

Graph VI illustrates several pertinent historical values for the period 1982-1988. The first two columns show the range of the interest rate corridor values, utilizing the 4-3-2-1 weighting that Jim Holland described at the Enrolled Actuaries meeting earlier this year. The graph shows that from 1982-1988, the minimum interest rate (the 90% rate) was extremely high. The second set of rates, derived from a recent Wyatt Company survey, shows the mean rate for cash funding during this same period. These rates are not directly comparable, but they do show a significant discrepancy between the corridor rates and what actuaries were using over this period. The mean rate progressed from 6.8% to 7.8%. The next column to the right shows the percentage of plans in this Wyatt survey that fell below the 90% corridor rate. As you can see, from a cash

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funding basis, the 90% rate was substantially higher for almost all plans over the six-year period of time where both rates were available. Finally, the Wyatt Company produced a recent survey showing the discount rate used for FAS 87 calculations by companies that complied early with the new standard. Again, the 90% rate for 1986, which was the only year in their survey, would have exceeded the rate used for FAS 87 valuations for 99% of the companies in that survey.

GRAPH VI

INTEREST RATE CORRIDOR

Year	<u>Current Liability</u>		<u>Mean Rate</u>	1987 Wyatt Survey	
	<u>90% Rate</u>	<u>110% Rate</u>		<u>Cash Funding</u>	<u>FAS 87</u>
				<u>% of Plans Below 90% Rate</u>	<u>% of Companies Below 90% Rate</u>
1982	10.33	12.62	6.8	100	
1983	11.09	13.56	7.0	100	
1984	10.91	13.33	7.2	99	
1985	10.99	13.43	7.6	99	
1986	10.39	12.70	7.7	99	99
1987	8.96	10.95	7.8	94	
1988	8.25	10.08			

MR. JAMES E. HOLLAND, JR.: I am Chief of the Pension Actuarial Branch at the Internal Revenue Service. I'm going to talk about adequate funding of retirement plans from the point of view of the Internal Revenue Service. Here, "retirement plans" means "defined benefit pension plans," which is something we all have been assuming. Although we really haven't put it forth in a direct manner, the Service believes that adequate funding of retirement plans should be addressed in three specific areas. They are the pattern of funding based on the funding method used, the level of plan assets versus liabilities, and the actuarial assumptions used in valuing plan liabilities.

Underlying all of the IRS's views in these three areas are two concerns. The first concern is for minimum funding standards. From the point of view of minimum funding, on one level we would want to see the most amount of money going into a plan in the shortest period of time. The second concern is for maximum deductions for contributions to pension plans. The concern for maximum deductions causes us to question and discourage relatively large amounts being contributed to a plan. "Large" here means large amounts relative to the number of participants, although it must be acknowledged that plan benefit levels can play a large part in accounting for differences in contributions per participant. The two concerns the Service has in viewing adequate funding are somewhat conflicting, and it's difficult to resolve the conflict in a way that pleases everyone. However, these concerns underlie our rulings, our regulations, and our general administration of the pension provisions of the Internal Revenue Code.

Looking first at the pattern of funding, I would like to restrict this to the actuarial cost method used for valuing a plan. We first looked at the question of adequate funding when we began about ten years ago to review requests for changes in a plan's funding method. At that time, we took the point of view that if a company was changing from a higher cost funding method to a lower

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cost funding method, we would not approve the request, no matter how well funded the plan was on a termination basis. We then changed our view. The concern, again, was minimum funding. What happened was that the consultants on the case for which we proposed to deny the request for change met with us and explained that the likely result of our view was that all plans would start out using a lower cost funding method because of the inability to change from a higher cost to a lower cost method. Thereby, over the long-run the overall funding adequacy of plans would decrease. We listened to that argument and changed our policy. From that time forward, we approved a request for a change in funding method if the new method was an acceptable method, and the transition was handled correctly.

The question of adequate financing arose again when we wrote our regulations on acceptable funding methods. There again, I might add, we see a balance. In general, the regulations prohibited the use of certain methods. Furthermore, we effectively adopted a set of rules as to what methods would allow for the adequate funding of retirement plans. Methods that did not take into account all plan liabilities were prohibited.

An acceptable method, in our view, had to provide for level funding of anticipated retirement benefits, or in the case of a unit credit method, provide that a generally level amount is taken into account as the normal cost. (As a side comment, those of you who were around back then will remember there was quite a controversy with regard to the projected unit credit with salary prorate method, a unit credit method. I simply point to that as an example.) Regulations, however, were mindful of our concern for maximum deductions. We require that the allocation of liabilities between past and future service be reasonable. We also restricted the ability to front load the funding of benefits under the unit credit method. In general, our regulations struck what we believed to be an appropriate balance between the concerns for minimum funding and maximum deductions.

The next area that we've focused on in terms of adequate funding is looking at the level of assets versus liabilities. Here I think I need to define my terms. Assets for this purpose means either the actuarial value or the market value of plan assets. We have not distinguished between the two. Our preference in the context we are looking at -- the level of assets versus liabilities -- has been for market value. Part of the reason for this lack of distinction is the fact that the actuarial value, by law, and by our regulations, must reflect market value. I'm sure you are all familiar with the 20% corridor around market value that the actuarial value must have.

Liabilities for this comparison have focused upon the present value of accrued benefits, the present value of vested benefits and the present value of benefits in pay status.

- o Present value of accrued benefits: Our focus on this measure has been in the context of considering requests for waivers of the minimum funding requirements. If the value of the assets exceeds the present value of accrued benefits, two things occur: (1) nonpayment of the contribution does not place an immediate burden on the PBGC; (2) if the company cannot afford the level of benefits they have, or the company is downsizing, the future benefit accruals of the plan can be adjusted. In other words, there isn't a potentially large cost to the PBGC because what's been accrued to date has obviously been funded.

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- o Present value of vested benefits: If the value of assets is less than the present value of vested benefits, there is concern for the exposure of the PBGC, as well as plan participants. I would add that there is concern for participants if the assets are less than the present value of accrued benefits.
- o Present value of benefits in pay status: If the assets are less than the present value of benefits in pay status, we have a concern for the immediate solvency of the plan.

Dave referenced a couple of plans; I believe they were the Allis Chalmers Plan and also LTV Republic Salaried Plan, both of which, he said, "had never had funding waivers." Here we can see the gamut from the type of severe underfunding in Allis Chalmers to one where assets are maybe slightly less than the present value of benefits in pay status in Republic Steel. Depending on the degree of funding, there is a concern for solvency. In our view, a plan is not adequately funded if the assets are less than the present value of benefits in pay status. That's not to say that the converse is true; it's not to say that it is adequately funded if the assets exceed the present value of benefits in pay status. However, in our view, it is definitely not adequately funded if the assets are less. In the context of considering granting a waiver, it depends on the level of assets versus the present value of benefits in pay status, because if there are no contributions going in, the plan will be out of money for benefit payments after a period of time.

This can occur in a very few years. Obviously, there are a number of factors that go into determining how many years it will take. Furthermore, because we're looking at this subject in the context of a funding waiver application, we need to look at minimum required contribution levels for paying the remaining obligations. A company could be down-sizing. This is often the case with companies that are experiencing some sort of cash flow difficulties. The contributions required to cover not only the currently accruing benefits, but the benefits that have already been accrued and those in pay status, can be quite significant. We have a concern with the company's ability to continue in business and to fund that level of benefits. They do not always have the ability to simply decrease these growing commitments in the near future either.

Any discussion of adequate funding of plans has to consider the actuarial assumptions. The main measures of adequate funding of plans use the present value of plan benefits. The present value of benefits, whether those accrued, vested, or in pay status, is based on actuarial assumptions. So is the actuarial accrued liability, which some people have preferred to use as a measure of funding adequacy.

Generally, the Service has tended to view actuarial assumptions in the context of adequate funding from the point of view of ongoing assumptions. We have not looked at a plan termination. We have looked at the freezing of benefit accruals, and then used assumptions that would be appropriate for an ongoing plan. Even companies experiencing business difficulties can freeze benefit accruals under the plan and fund the accrued benefits in future years.

The Pension Protection Act, however, requires use of an interest rate for calculating the current liability that takes into account the annuity purchase price for plan liabilities as if the plan were terminated. Plan liabilities are defined under

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Section 412, which is essentially on a plan termination basis. This may cause our views to change in the future.

Our focus, with respect to benefits, has been on retirement benefits. We have looked at a plan as providing primarily retirement benefits. We have not looked at the funding of ancillary benefits as being important in reviewing the appropriateness of assumptions or the adequacy of funding of pension plans.

This focus has been heightened in some of our recent litigation, where one of the main areas of disagreement is the preretirement interest rate assumption -- in particular, the use of a 5% preretirement interest rate assumption. The argument has been advanced by the parties that are bringing suit against the government that if a participant dies prior to retirement and shortly after the plan has been started, the use of the high interest rate that we had requested at examination would not accumulate enough money in the plan to provide the death benefit. In particular, with small plans that seem to be at issue at the moment, we view this probability as small. Therefore, we believe the focus should be on the adequate funding of retirement benefits and the use of an interest rate that will prove adequate to accumulate sufficient funds to provide for the retirement benefits. I am sure some of you might have heard about this IRS view. It has been much discussed over the years. This basically concludes, in a somewhat abbreviated version, my prepared remarks.

MS. SMITH: Michael, would you please give us the view of adequate funding from the perspective of the investment community and/or plan sponsor?

MR. MICHAEL H. TRENK: The title of this session is "Adequate Funding of Pension Plans." I think it should be more like "Desirable Funding of Pension Plans." There are both upper and lower constraints on pension plan funding. The plan sponsor and the investor find many factors influencing funding policy for the plan, some of which encourage high funding, some of which encourage low funding.

On top of any plan sponsor's mind is the benefit security. There are two types of benefit security. One is "are the checks going out on the first of the month." For that you really don't need much funding at all. If you had 10% funding and the rest of the assets disappeared, you would still be able to pay benefits from cash flow for most plans.

What about "future benefit security?" If word ever got out that your funding level is only 10%, your house of cards falls down. I view it as the employee holding "benefit bonds" issued by his company that mature 20, 30, or 40 years out. The bonds have a certain quality based on the financial health of the pension plan. After a while, if the plan is not being funded very well, the employees, prospective employees, commentators, and consultants begin to circulate word that this pension plan is not well funded. The "rating" on its "benefit bonds" falls to junk levels, and the pension promises lose their financial and motivational value.

There are other factors that affect the desirable level of funding. Take, for example, corporate event risk. If a corporation has a huge surplus in its pension plan, as many plans do these days, the pension plan becomes a target for outside investors, possibly hostile ones. An overfunded plan is particularly attractive for someone to gobble up, liquidate, pay off the benefits through an

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annuity contract, and then realize reversions of hundreds of millions of dollars or more.

When a plan gets very underfunded, the company is likely to be experiencing difficulty. Creditors want to be paid, current employees want their salaries, and retirees want to receive their pensions. Of all the people owed money in a bankruptcy case, the retirees have the weakest natural claim. Suppliers must be paid to get goods, and employees must be paid to operate the company. Lacking a compelling reason to be paid, retirees need protection from the government to secure their pension benefits. At the same time though, it is debatable as to whether a company experiencing financial difficulties, forcing current employees to accept pay cuts and give backs, delaying payments to suppliers, and paying debt at 50 cents on the dollar, should insist on paying 100% of pension benefits to retirees. Should the retirees share in the difficulties of a company for which they worked many years?

The funding level also affects many other things, including how these funds are going to be invested. A company with a low funding level is usually less likely to take risks in its investment strategy. It is more likely to buy bonds, or money market instruments, the asset classes that have lower expected returns and less risk than some of the other investments available. So for this reason, it is desirable to have good funding, because you can have higher returning investments and eventually you will be even better off. Therefore, investment policymakers desire healthy funding.

Added to that is the new PBGC premium schedule which requires underfunded plans to pay higher premiums. This amounts to another penalty for being underfunded, and another reason to increase the desired level of funding.

Then there is the tax issue. Tax deductions encourage overfunding as does the tax sheltered accumulation of funds in a qualified pension plan's trust.

Finally, the corporation has concerns about return on capital. If a pension fund might be able to achieve an expected return of 12 to 13% by purchasing equities, or 8 to 9% with fixed income -- the results of taking corporate money and investing in the pension plan -- it should also consider investing in the corporation itself. Perhaps the overfunded pension plan could be tapped to buy a new factory or hire new people.

The corporate plan sponsor must balance many conflicting issues. I would guess that the majority of these factors tend to pull funding ratios up for the financial good of the company.

Let's move to the liability side. Which liabilities should be funded? The prior speakers seem to say that the Accumulated Benefit Obligation (ABO) is about right. In that case, I should mention other liabilities, especially the past service liability. I think that when a pension plan grants benefits for past service or negotiates a benefit increase, those liabilities are there immediately, regardless of the amortization period used.

What this implies is that companies keep notional balance sheets which may depart from the official ones. These notional balance sheets may contain liabilities not officially recognized but that are likely to be paid. Nonpension liabilities in this category include: postretirement medical, employee gratuities, philanthropic activity, etc. In the pension area, companies may consider their

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true "likely" liability to be well in excess of the ABO, perhaps the PBO or more. There is a limit though as to how far you can project "notional" liabilities.

When I graduated from college, someone asked me to donate money to my 25th Reunion Fund. I was a little bit taken aback. I said, "Why are you asking me now to donate money to my 25th Reunion Fund? Why don't you ask me 24 years from now?" He said, "I want to adequately fund it." I sarcastically added, "Why don't you also ask me to pay the tuition for the two children that an average family has even though I don't have them yet, and later on, if I don't have the children, issue a refund?" I might prepay my funeral if I was 70, but I certainly would not prepay my grandson's funeral. After a while, forecasting errors outweigh the benefits of forecasting.

The corporation has to realize that the more money it puts in a pension plan, the less the company behaves like itself. For instance, if company "X" invests in its pension fund, what happens? The pension fund buys shares of company "Y" which invests its pension fund in company "Z." Before long every company is reduced to the S&P Index. So the corporation makes a policy decision: how much to invest in the corporation versus how much in the broad market indexes.

Getting back to liabilities, I see two classes of standards. One is the transaction value approach that says the plan sponsor always has the option to terminate the plan. Therefore, the liabilities of the plan are no more and no less than the best annuity bid available.

In the extreme, one could also argue that the appropriate liability is the curtailment benefit. If the workplace becomes unpleasant enough, and all employees voluntarily leave, the liability is just the vested benefit obligation (VBO).

The second standard of liability valuation is a going concern basis, which aims to use smoothed values of expected long term results. It is justified because there is no liquid market for pension liabilities. We are trying to develop one, and we are seeing progress in the area, but at present it is impossible to tell what assumptions would be used in a plan termination without actually securing bids. It is our opinion that the only right interest rate is the rate the market decides is right. Any interest rate that regulatory bodies set should be as close as possible to market rates. To the extent that they differ, you get economic distortion, which usually turns out to be harmful.

The plan sponsor's psychological outlook determines liability valuation, if valuation is done on a "likely outcome" basis. It can range from minimum compliance with the law to reasonable and customary behavior to extra generosity. You could also use probability estimates to provide benefit security at a designated confidence level.

Another problem, smoothness versus fit, has constantly bothered valuation actuaries. If a plan values assets on October 1, 1987, and November 1, 1987, and there is a decline of 25% because of the market crash, should this affect the pension valuation? And should the company worry about these issues, knowing that over the long run, these differences in valuation will not significantly affect long-term benefit security. In my opinion, the answer should depend on the size of the company and its environment. For instance, in a large plan not likely to be terminated, I would advise a valuation curve that smooths contributions and the funded ratio. In a smaller company, or a company undergoing lots of change, you should keep the pension valuation close to the market; or else

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someone will make it close to the market value for you. The concept is similar to the principal of stock index futures arbitrage. Futures prices can get away from the cash index value by a certain amount, but if they get too far off, they can suddenly snap back when somebody acts on an arbitrage opportunity.

On the asset side, we believe in market value wherever possible, and that smoothing should be done only to the assets which cause the plan's surplus to change, not all assets. If a bond portfolio looks like liabilities, it doesn't need to be averaged at all, and by averaging you actually cause harm. With equities, you might want to average because of situations like October 1987. Here we feel it would be nice to average things so that plans could be evaluated consistently. A plan may also wish to hedge its way out of risk with real financial instruments other than just average its way through. Hedged, rather than averaged, plans could also save the PBGC considerable expense.

I can see a usefulness in valuing assets and liabilities on a "worst case termination" basis, meaning current market value less the worst plausible fluctuation that could happen during the time it would take to terminate the plan. "Worst possible fluctuation" would vary based on how hedged the plan is.

To summarize, my message is that the market is out there. Don't try to fool around with your pension balance sheet. If the liabilities are there, you can't hide them by not funding them. Analysts are paying more attention to pension footnotes. If they see a pension plan very well funded or underfunded, they may reconsider the sponsor's credit rating and their opinion on the equity price. Pensions are becoming so big that they are beginning to affect the finances of the whole company.

