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A Brave New World: Pension Funding Methods

Track: Retirement Systems Practice Area

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Panelists: Ronald Gebhardtsbauer
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Summary: What would we do if we could start pension funding all over? Would we have minimums, maximums, solvency-based contributions, the PBGC? What does financial economics say about how plans ought to be financed?

MR. RONALD GEBHARDTSBAUER: What did the economy do? We can't take a position on any one way to fix it. But we will talk about what some of the principles for funding are. Employers, employees, all the stakeholders, PBGC, etc., are all interested in changing funding rules.

Employers are really concerned about volatility when you fall into deficit reduction contribution (DRC). They want something that's more predictable. Employees are concerned about solvency. In fact, we made solvency our very top reason for funding, the most important issue. Not only do employees want to be 100 percent funded, but also for the PBGC.

There are concerns regarding takeovers, like stockholder transparency and knowing how well-funded a pension plan is. Everybody is interested in fixing these rules. But there are quite a few rules, and they are not all going to agree with each other. And you can't make everyone happy and still have defined-benefit (DB) plans. Congress may have to balance some of these principles. It's not going to be an easy job.

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I think that all of the rules in ERISA were about becoming solvent. But really, some of the rules only take us to up to 90 percent funding. The Academy is suggesting, at least, 100 percent funding.

We talked about not only getting solvent, but staying solvent. A lot of professionals would say that you should go with bonds. Another way to stay solvent is to have margins. You could encourage or require margins in the plan. Actually, bonds may not solve all of your problems, because you could have large catastrophic shutdown benefits. You can have early retirement subsidies. These can change your liabilities pretty quickly, especially in bad economies when everything is going down and the company is going under. In addition, you could have a lump sum.

In each one of these areas, you could fund for huge shutdown benefits. But if you never get to the point that you need them, a lot of employers are going to say that they don't want to have to put all of that money into the plan. So what are some of the other things?

This brings us into design issues. Maybe some of these options should not be in the plan, if we can't fund for them, or we don't want to fund for them. We have reversion taxes for which, once you put money into them, you can't take it out if you don't need it. Maybe we should take some of these things out of plans. Other possibilities are PBGC phase-in of shutdown benefits, not from the date of the amendment, but from the date of the shutdown. And lump sums, for instance, are not even in current liability. We're encouraging them to be in current liability to make it easy for us to get rid of these lump sums.

My last issue on solvency probably is the biggest one that they're struggling with in Washington, D.C. There are some companies with, believe or not, \$40 billion in credit balances. And they don't want us to change the rules of the game. They've put a lot of money into the plan. They could have kept it outside of the plan and only funded it to the minimum. But the credit-balancing professionals put it in there, because they were told that they could always use it. Now if you don't have credit balances, then it would make more sense to leave the money outside of the plan. Then you don't have to worry about reversion taxes when taking the money out. A lot of people feel that it's important to have credit balances, so employers will put more in than the minimum. Right now, the credit balance goes up at the actuarial valuation rate. So actually, you're getting a break to preserve this idea of allowing you to have the money on the outside. Your plan is exactly where the minimum would have been. You'd have the credit balance earn a return equal to the actual return on plan assets. So that's one possibility.

Another is to say that if you're only 60 percent funded, you shouldn't be allowed to use the credit balance. It could be restricted in its use. You always have to pay at least the normal cost. And maybe you'll be allowed to waive it if you get permission from the IRS.

Employers are most interested in contribution predictability. Some of the issues include volatility, which I talked about with the deficit reduction contribution (DRC). Your assets or your liabilities can change a little bit. If you become less than 80 percent funded, your contribution is much bigger. We're talking about ways to smooth those rules to accommodate the business cycle. With the way that the rules are now, you can't put in very much during the good times. For instance, when assets did really poorly one year, a lot of people would have wanted to put in the unfunded accumulated-benefit obligation (ABO). But they couldn't because of accounting rules. So we'd like to enable companies to do that.

We'd like to enable companies to hedge their risks. Instead of predictability, hedgeability is better. Invest in bonds; immunize your risk. But you have problems with current liability, because that's done on a smooth interest rate. So maybe we should allow an inquiry if they want to immunize. We should allow them to use current bond rates.

This next topic is DRC rules. We're thinking about fixing it to smooth out fluctuations. The DRC rules for poorly funded plans would gradually merge into the old 412(b) amortization rule. One way to do that is to remove the rule that if you're under 80 percent funded, you have to do it; and if you're over 90 percent funded, you don't do it. There are other ways to change that, like making interest rates closer together. That's already happening. Your interest-rate assumptions are becoming lower. Congress enabled the DRC to be calculated in a corporate-bond rate. Another way to do it is to make the amortization periods more similar. So for instance, the 30-year rate is way too long. Maybe you could bring that down to 10 years, so that there would be more similarity between these two. Another way to do it is to have one set of rules, instead of two. There's a lot of discussion around that.

The big issue is smoothing, which we're all going to disagree on, probably. What is some of the rationale for smoothing? The valuation is only one day in a year. So everything is determined on that day. For instance, in October of 1987, when the market crashed, if you had a valuation right before the tank, a year later, you wouldn't have noticed any problem, because the market came back up pretty quickly. Your contribution could have been \$50 million this year and \$50 million next year. But instead, suppose your valuation was on November 1. You'd have that big tank in the stock market on your valuation, so you showed huge losses. You had to pay in \$100 million this year. And then next year, after a big gain, you wouldn't put anything in. So what makes sense? Two years for which you put in \$50 million, \$50 million; or \$100 million, and zero? That is one idea about smoothing.

Suppose you did a valuation every day of the year. I know that you don't want to do a valuation every day of the year. Let's say that you did, and you multiplied results by one over 365 and got a theoretically correct number that way. That, maybe, justifies smoothing over one year. Suppose you did your valuation in June

2003, you would have been using 4 percent interest, if you were using Treasury rates. Just two months later, when your results come out, Treasury rates are now 5.5 percent, and your results are way different. So interest rates can change an awful lot. That's why some people would say that we need smoothing.

The other issue on smoothing is that the current system has worked pretty well. So some people have said, "If it works pretty well most of the time, do we want to change all the rules radically?" Most of the time, your answers aren't that different when you smooth. But sometimes, there are situations for which smoothing really makes things look a lot different. Should we fix it for those situations? Do we get something that works perfectly and get to a point at which people don't want to have DB plans? That's why Congress needs to balance some of these issues.

Some people have talked about smoothing the normal cost plus the difference between market assets and market liabilities, but not smoothing the input for assets and liabilities. For that, they would want to find out the real difference and divide by five or 10, or something like that. That's your contribution. That can be volatile. Some of the suggestions are to smooth the contribution after that. You could make a rule that in no way could the contribution this year be a lot more than the one last year. You could lock these contributions at 25 percent of your normal cost, or no more than last year's contribution plus 2 percent of the current liability.

The Academy is agreeing on accounting and transparency issues. People really need good information. How can you be against good information? How can you withhold information? I know that some people are saying, "Why scare workers?" I think that we're pretty much all in favor of supplying this information every year and on a timely basis. Information takes way too long to come out. It's two, three years old by the time it's available. A lot of people thought that they had well-funded plans, like the pilots. The steel people thought that they had very well-funded plans, but found out that they're not. Part of the reason is smoothing. Part of the reason is very old data. So maybe one idea is, your financial accounting standard (FAS) information—which is an aggregate, for-all plan—should come out on a per-plan basis.

Another idea is to provide for asset allocation, so that you can make an estimate. If you know what the funding level was at the beginning of the year, you can make an estimate later on in the year to see how it's doing. Another issue involves incentives to fund flexibility. I think that the issue is deciding how much flexibility. The Academy doesn't decide how much flexibility, but we give some suggestions. At one time it was suggested that a plan that was funded to 130 percent of current liability would have enough to avoid most problems. But that wouldn't be enough to avoid the last few years' problems. You could be at 130 percent, and after the last few years, you would be way below 100 percent. So some people are talking about allowing plans to get deductions of up to 150 percent of current liabilities.

Other ideas would be to fund enough to avoid your PBGC premiums, because they

use a very low interest rate for the premium purpose. You contribute enough so that you can avoid that. Allow enough to be able to contribute the unfunded ABO at the end of the year. Allow hourly plans to prefund their hourly improvements in the future, not only the ones that have been agreed to, but make an estimate. And a lot of people say that's very unclear. You don't know what they are going to be. So maybe we have to write it in law. Assume that they are going to go up by the CPI (Consumer Price Index), and just allow a plan to deduct that. There are questions as to whether you want to require, encourage or allow, though.

The other incentive is, you can let employers put it in. But they still are not going to do it if the reversion tax is really high. And right now, it could be 95 percent when you add the income tax, reversion tax and state tax. So if there could be ways to reduce that, there's real resistance on the part of labor. Maybe there's something that we can do to finesse it. For instance, they don't want you to be able to be a corporate raider: come in, buy the company, take the surplus out of the plan and run. What are some ways to prevent that? It might be something like Section 420. If you have a super surplus, allow us of some of the assets off of the top to help the retiree health plan. You can already do that. Maybe allow the active employees to plan. Labor might be interested in that because a lot of employers are not so sure that their health plans for employees are doing well. Maybe they should allow some transfer. Or, even further, allow employees to take money out of the plan, but only in little bits, not all of a sudden in a big amount.

We shouldn't have rules that allow employers (in fact, encourage employers) to put in benefit improvements, and ultimately take advantage of someone else to pay for it. This would apply not only to PBGC, but premium payers. One idea would be to increase the amortization periods. Possibly, they're talking about risk-related funding roles or risk-related premium roles. That could be a function of the credit-rating plan assets. There are some complexities, difficulties in those areas. I think that I would want to go one step further. If you only had a tiny DB plan for a huge company, you might be willing to take risk. It may be only a problem if your company has a big pension plan, in comparison to the size of the company, so there could be a connection to how much risk is involved for your big or small company. Some other ideas are to require bigger premiums or different funding.

But we learned with UAL Corp. and U.S. Airways that companies in trouble will just say that they won't pay back. If they are in bankruptcy, you can't even put a lien on them. And if you could, you can't protect your lien, because they are in bankruptcy. And so, I think that you need to go further. This is where we get into benefit restrictions and benefit design issues. Even in bankruptcy, companies keep paying utilities. Because if they don't, they'll turn off the lights. So in the pension plan, if you're not going to make your contribution, or if you're not going to pay your PBGC premium, maybe an automatic rule should kick in that says that we can "turn off the lights" on their pension plan. There will be no more accruals. Right now, you can't make amendments. We might free the accruals, so you can't pay a lump sum, etc. Lastly, we should improve PBGC situations.

And another principle of simplicity—maybe we should have one amortization period, one funding rule, and disconnect the minimum and maximum rules. It would make it easier. Eliminate quarterlies; they add a lot of difficulty, and just have one end-of-the-year contribution. My last suggestion is to add alternatives to the complex yield curve.

The Academy appreciates the benefits of using a yield curve, but it adds a lot of complexity, so we feel that it's a distraction to getting legislation done. We're not sure that the benefits are enough for all of the additional work that a yield curve costs. For example, if you use the yield curve, it's going to increase your cost by maybe 3 percent, and that's for a short plan at a time when the yield curve is very steep. And most of the time, the yield curve is not very steep.

In the last few years, the yield curves have been moderately steep. Around 1992, the yield curve was very steep. It's only going to work for mature plans. For a young plan, it will reduce your cost. In addition, if you're going to tell us to use the most accurate interest rate, we should be allowed to use the most accurate mortality table. And so, if you have different mortality tables, maybe the best thing would be to use experience. But suppose you, in a mature plan, want to use blue-collar mortality. That could lower your cost by about 3 percent. So increasing cost by 3 percent, the yield curve is wiped out by the mortality table.

In addition, I think that you'll hear from the Department of Treasury that the yield curve gives you the perfect, accurate answer. We're not sure what the perfect answer is if you have all of these other things like early-retirement subsidies, shutdown benefits, lump sum, etc. They can change your answer an awful lot. When we're talking about something that has 3 percent efficiency, that's less than what an accountant would say is significant. In addition, it's going to cause communication problems—explaining the lump sums calculated on a yield curve, employee contributions accumulated using the yield curve. It will cause legal problems.

MR. KENNETH BUFFIN: We'll move right along to Mr. Munzenmaier, who's going to tell us about the wonderful world of the Defined Benefit Retirement Income Security Act (DBRISA). Is DB worth saving?

MR. FRED MUNZENMAIER: I want to start by quoting a couple of the great thinkers of the Twentieth Century. The first one is from Yogi Berra, "When you come to a fork in the road, take it." I think that with DB plans; our fork in the road, at this point, is more like a U-turn. I think that's what you're going to see as I get into the proposals under DBRISA.

The second quote is from Albert Einstein, who said, "The significant problems we have cannot be solved at the same level of thinking with which we created them." It boggles my mind that we lament the fact that DB plans are disappearing. And yet, we keep doing the same things over and over again to try to kill them. We

make the funding rules and the administrative rules ever more complex. We create an environment that makes these plans short-term financial obligations, which eliminates the key advantages of DB plans, which is their ability to withstand short-term fluctuation.

As we were planning for this session, my colleagues on the panel suggested that I say something about whether or not DB is worth saving at the present time. Clearly, I believe that DB plans are worth saving. If you think employees don't understand a DB plan, try taking one away from the employees. And on an even more personal level, try retiring as an individual without a DB plan. I just retired, and I had a DB plan. I couldn't help thinking about what this would be like if I didn't have one. I think that we need to do whatever we can to save DB at this point.

I think that if we're going to solve the funding problem, we can't look at it just as funding. There are so many inter-relationships that we have to examine, like we did 30 years ago with ERISA. When people wrote ERISA, they looked at things like funding, plan-termination insurance, plan governance and pensions. They didn't get into accounting. They looked at everything as one problem and addressed it as a whole, instead of addressing the 30-year Treasury rate at one point and PBGC at another point.

When I was young in the early '70s, my company put me on a big account. I was able to attend the pension committee meetings, which were held quarterly with this big company. And on the board of the pension committee, the chairman of the pension committee was the CEO of the company. All of the other senior officials of the company were on that pension board. Every year, they would vote to put in the maximum deductible contribution into that plan. And looking back, it finally dawned on me that it wasn't an analysis of financial economics that led them to that decision. It was because that was their pension plan. They looked at it from a security standpoint. There were no pay caps. They weren't getting their pensions from a supplemental executive retirement plan (SERP). We would look at things in totality and really think about how one issue was going to affect another.

With DBRISA, there are two novel concepts. And frankly, I don't think that we are going to do it. But if we were to do it, you'd have to have people willing to give up some things that they hold sacred. The plan sponsors, the employees, the actuaries, the accountants, the IRS and the Department of Labor all are going to have to give up something. In my opinion, they'd get a whole lot in return. We need to return to an environment in which we provide incentives for plan sponsors to do the right thing, such as tax benefits, rather than have punishment for doing the wrong things. Right now, there's a whole chapter in the Internal Revenue Code, starting with 4971 that lists penalties that plan sponsors are subject to that are horrendous in their consequences and are triggered mainly inadvertently. I just don't think that those things do any good, especially in promoting DB plans.

In getting into some of the details of DBRISA, I will address plan governance before

funding. In order to make what I'm suggesting for funding work, I think that the employer has to be willing to give up some control. That would be by allowing boards of trustees to govern these plans, which would be made up of employer participants and outside representatives. It's going to be a very bitter pill for an employer to swallow. But I think that if you look at some of the other things that are going to follow, maybe they'd be willing to do that. And politically, I don't think that you could do some of the things that we want to do without spreading the control of these plans away from the employer. So it doesn't look like we're just favoring the employer.

First of all, unless the plan document says otherwise, excess assets belong to the employer. The employer is taking the risk; the employer deserves the reward. So let's admit it and provide for that. That's an exchange for giving up some of the control. Asset-reversion taxes would be eliminated. You also wouldn't have to terminate your plan in order to get an asset reversion. As an actuary, you would not be allowed to assume an equity risk premium above the corporate bond rate in your actuarial assumption. These returns that you get from investing in equities actually would have to emerge before you can take advantage of them by having a high actuarial assumption. I see a select and ultimate inflation rate as a building block in your assumption. You can predict inflation in the short term; you know about results two or three years out. So your assumption would have a basic building block of your best estimate for the next two or three years. But after that, the building block for your inflation assumption would be based on historical returns.

Your assets and liabilities would be broken up into what I call a guaranteed pool and a waiting pool. The guaranteed pool involves benefits that are going to be guaranteed in the event of a plan termination. And if you have assets that exceed 125 percent of the value of your guaranteed benefits, the employer can take that excess back without any reversion taxes. When the employer takes it back, they are taxed at the corporate tax rate minus 7.5 percentage points. Have some tax incentive to fully fund your plan because if you can take these assets back, you get some financial advantage.

In measuring the value of the liabilities in this, you would not be allowed to use an equity risk premium. Yogi Berra said, "You're only going to be able to have good things happen after they happen." In other words, you can use this information after you realize the equity returns, and not in advance by having a high investment-return assumption.

Now here's a big issue: plan termination insurance and the link to plan and funding. First of all, I would turn all of the PBGC funds over to the Treasury. All private pension benefits would be guaranteed by the full faith and credit of the U.S. government. That sounds pretty radical. But isn't it kind of like the same deal that we're giving to the military and federal civilian employees? I'm told that those plans are underfunded by a trillion dollars.

I'm talking about the PBGC. I don't mean to slam the PBGC, per se, and I'm just talking about the plan termination concept that is in ERISA. I think that it's a bad deal and should be rethought. When I started putting all of this together, the PBGC was reporting that its underfunded liability was like \$9.3 billion. I think that they're saying that it's much higher than that now. But even at that, it's kind of trivial when you compare it to the federal budget, which is \$2.4 trillion per year. It's also pretty trivial when you compare it to underfunded liabilities and federal retirement programs. The PBGC would become the Pension Benefit Administrative Corporation (PBAC). All it would do is administer terminated plans. There would be no PBGC premiums. Again, because of the benefits, taxpayers are going to support themselves by protecting their own pension benefits. Benefits simply would be guaranteed after they become vested, after five years and not according to the very complex rules that we have in the law already.

The link to plan funding—the plan actuary would determine the annual minimum contribution to a guaranteed pool and a waiting pool. The guaranteed pool of assets would be the assets behind the guaranteed benefits—in other words, benefits that are vested for over five years of service. And the waiting-pool assets would be contributions to people who are approaching vesting, less than five years of service. Each year, a proportionate share of the assets would roll from the waiting to the guaranteed pool, along with the liabilities. The minimum required contribution is a rolling five-year amortization of the unfunded waiting, plus, a rolling 10-year amortization of the unfunded guaranteed benefits. It would be based on the traditional unit credit and ABO normal cost.

These theories were all pulled out of the air. I was sitting in my office one day, reading about how 20 percent of plans were considering a termination. And I just said, "What the heck is going on here?" I started writing all of this down. I thought about what I would do. What I'm trying to do is stress the concept. The details could be worked out.

Plan terminations still would require the purchase of guaranteed annuities. A plan sponsor could terminate a plan if the assets already covered the guaranteed and waiting-pool benefits. In other words, if funds were sufficient to cover the funding of those benefits, the plan sponsor could terminate the plan and walk away with whatever excess assets there would be.

The plan trustees could terminate the plan if three-fourths of the trustees agreed that it was best for all concerned. The waiting-pool assets would be rolled into the guaranteed pool to the extent needed to cover guaranteed benefits. And unfunded waiting-pool benefits would be forfeited, any unfunded guaranteed benefits would be provided for by Uncle Sam through the full faith and credit of the government.

As a part of the funding rules, the IRS could consider waiver requests. And if they saw requests come across their desk that looked like there was no hope, they could encourage the plan trustees to initiate a termination of the plan.

There would be no deficit reduction contribution and no funding standard account contribution. There would be no funding standard account for younger people. Back when I started this, these options weren't there. They didn't come down from the mountain with Moses, you know. So there was life without them, at one point. There would be three years of smoothing of actuarial assets. For minimum contribution purposes, the method would be the traditional unit credit. The maximum tax deductible is the five-year amortization of projected unit credit toward the guaranteed and waiting unfunded benefits. Any contributions in excess of the minimum go into the guaranteed pool of assets.

Accounting—again, the accountants already are expecting changes from the International Accounting Standards Board and increasingly are making pension plans such short-term obligations that I'd like to see some changes there, as well. In fact, there probably should be even more smoothing and not less smoothing, as we're being encouraged to consider. The SEC directs the public company accounting oversight board as to pension accounting principles. The expense would be an established policy between the minimum and maximum IRS contribution, but not less than the ABO normal cost plus seven-year amortization of the unfunded ABO. There would be no more charges to other comprehensive income or special curtailment accounting. Financial economics professionals need to know about possibilities in investing pension disclosures, such as the consequences of what would happen in a plan termination.

There would be no more lump sums taken from DB plans, except for the small fund. I think that the lump sum caused a lot of problems. People anticipate, and they take out lump sums when they know that the plan is going to be terminated. Back in the early days, there weren't lump sums in pension plans. They got there through 10 percent interest rates. The CEO noticed that you could take a lump sum at a 7 percent interest rate out of your plan. So he had a lump-sum provision put into the plan, so he could take advantage of that scenario. And then, once they're in, you can't get them out. I think that plans worked a lot better without them.

Transition from current rules—assets would be allocated to current accrued benefits. Those benefits would become guaranteed benefits, to the extent not covered by current assets. The accrued benefits would become part of the waiting pool. And at the point of transition, the trustees would decide if the waiting-pool benefits are viable. If they're not viable, those benefits would be forfeited. On the other hand, the employer couldn't get an asset reversion until it restored any forfeited benefits.

MR. JEREMY GOLD: We presenters were asked what we would do if we had a clean slate. My response today may be described as more rooted in economics than in traditional actuarial science.

My assertions are strongly supported by the lessons of financial economics. Almost all of my arguments are based on arbitrage. They usually do not depend on market

views, nor upon individual preferences for risk and reward, nor upon statistical-return properties. They do not depend on the magnitude or existence of an equity risk premium in any way.

I will talk about minimum funding rules and the role of the PBGC (Gold Slide 2, Page 1). I will try to tackle this in three quick steps.

(Gold Slide 3, Page 2) First, thinking again as an economist, benefits are promises made in lieu of pay. If we promise and do not fund those promises, we are borrowing from our employees. With transparency, rational employees must be expensive lenders, because they cannot diversify their inherent overexposure to the employer's risk.

Funding the promise amounts to the provision of collateral. The provision of collateral makes a promise itself more valuable (Gold Slide 4, Page 2).

The implication of this is that borrowing from diverse lenders (for example, banks or bond buyers), in order to fund, lowers the total compensation cost. Diverse lenders will demand less interest than a rational employee would demand.

Furthermore, in Anglo-Saxon countries, borrowing in order to fund delivers a tax-arbitrage benefit to the firm's owners. Thus, with rationality and transparency, and no government guarantees, employers and employees would agree that benefits should be fully funded.

(Gold Slide 5, Page 3) Now, let us recognize that employees are often ignorant lenders. But recognizing that society is all of us, shareholders and employees, our collective interest cannot be served by letting Peter rob Paul. Society can impose the results that transparency and rationality imply. Imposing full funding turns out to be Pareto (Gold 2003a) efficient. This is not a moral issue. I am not making a moral statement. This is the result of economic analysis.

(Gold Slide 6, Page 3) All of the minimum funding rules can be replaced by one rule: "stay fully funded always."

Current rules tell us that funding history is consequential. It is not. What matters is the funding ratio and the asset/liability mismatch. For example, if a company is 90 percent funded and 60/40 invested, it does not matter to society how it got there (Gold, 2003b).

There is an argument often made to Congress that we should allow more funding in good times. Consider the period 1998 to 2000. Maybe General Electric would have contributed more to increase its tax shelter. But would Bethlehem Steel have contributed above its minimum? Even if Bethlehem Steel had contributed more in that period, they only would have lost more money and gone bankrupt sooner. What looks like a plea for time diversification often turns out to be, instead, a plea

for a tax break for strong companies. And tax breaks are not free. They are costly to society.

(Gold Slide 7, Page 4) Let us look at the effect of government guarantees. Pension contracts are long-term. We know that. By the time of a pension default, many employees are too old to recover. Society commits itself to making sure that pension promises are kept (Gold 2003c). It does so by a combination of monitoring, funding rules and insurance. As we know, monitoring is usually annual and delayed.

Funding protects:

- employees if there is no government insurance,
- the government insurer, if there is an insurer,
- other companies if the insurer, like the PBGC, is a mutual insurance company among corporations, and
- the taxpayer, who may be called upon to bail out the PBGC.

(Gold Slide 8, Page 4) Insurance is efficient for pure accidents. The independent burning down of a house is a good example of insurable risk. People will pay to share in the losses of 100 homes, rather than bear the risk of the entire loss on their own home.

With the PBGC, we get a default game, in which the weakest sponsors fund as little as possible, mismatch a lot, and make promises that others must keep. Full funding mitigates against anti-selection and moral hazard (Gold 2003d).

An alternative is to allow underfunding and mismatches while charging perfect risk-adjusted premiums. Among other things, this requires intrusive monitoring of the plan and the sponsor. Residual information asymmetries, however, imply that we would have to overprice those perfectly priced premiums, in order to make up for those companies that were not giving us all of the facts. In the end, we would need to overcharge until we have coerced all the companies who were not lying to us into borrowing and funding their plans. Then the PBGC would be left insuring nothing but the liars. Thus, in my view, the "perfect premium" approach is a second-best solution. The first-best solution is full funding at all times.

(Gold Slide 9, Page 5) In the last three years, we have had a rich argument about the use of AA-bond indices to measure funding status. If the idea is to make each company pay for its own promises, even if it goes bankrupt, then AA is always inadequate. Assume that you have a perfectly matched, well-diversified AA portfolio on the day of bankruptcy. In order to meet all of the promises, every one of those bonds must make every payment on time for 30 years. A well-diversified portfolio has hundreds of different bonds, all with AA status on day one. What is the probability that they all make it? Anything less means that the employer has not fully paid for the promises it has made.

If we monitored daily and paid for our losses immediately, merely having assets

equal to the liabilities every day would be fine. But with benefits continuing to accrue and mismatch risk, full funding requires a cushion.

(Gold Slide 10, Page 5) Funding measures require a yield curve. It should not be an item of debate. A yield curve facilitates hedging. Indices and averaging make hedging more difficult. The Academy has argued for predictable funding targets. Financial economics teaches us that hedgeable funding standards are much sounder. "Predictable" means that I can estimate the distribution of risky outcomes. "Hedge-able" means that I can take, manage or dispose of the risk, as I choose. That is much more powerful than being able to predict it.

U.S. funding rules average bond yields over time to make the measure more predictable. This is counter-productive. Consider the Treasury proposal to use a 90-day average. Suppose that on every one of those 90 days, a plan owned the perfect matching portfolio. At the end of 90 days, it would not meet the standard half of the time. Averaging makes hedging difficult or impossible or costly (Gebhardt/bauer et al 2002).

MR. BUFFIN: We'd like to open this up for a broad general debate and discussion.

FROM THE FLOOR: Mr. Gold, let's assume that you're brilliant and correct in everything. And everybody in the world buys bonds that perfectly match their liabilities. There will be a terrific impact on the bond market that will completely destroy the asset/liability match, will there not? Could you please address what would happen?

MR. GOLD: There will be a big impact. It will not destroy the match.

FROM THE FLOOR: It won't destroy the match? It will make it more expensive.

MR. GOLD: That's correct. Let me discuss this, because this is a frequently raised point and an important one. When you consider such a sea change as everybody buying bonds, you have to do it in two steps. First, you have to figure out what the new equilibrium will be like. Then you can think about the transition that gets to the new equilibrium. When we want to buy long bonds for our pension plans, and we want to get rid of equities, the immediate effect will be to lower equity prices and raise bond prices.

Thus the very next issuer, the very next CFO deciding whether it's more efficient to raise capital by selling bonds or by selling equity will be marginally moved to sell bonds instead of equity. The next pension plan does the same transaction, and the next issuer adjusts. And there will be, for a transition period, downward pressure on total equity returns, upward pressure on bond returns, and a new equilibrium characterized by leverage on the balance sheet of the company, not the pseudo-leverage or quasi-leverage that comes from pension plans that borrow by making fixed-type promises in order to invest in equities.

Note that we already have leverage in the aggregate firm. In the new equilibrium, the leverage will be on the balance sheet where it is tax-efficient rather than in the pension plan where it is not. Instead of a cross-holding of equities between firms, we will have a cross-holding of bonds. The new equilibrium is perfectly sound. During the transition we may expect relatively poor equity returns and relatively better bond returns. That means that the first mover gets a permanent one-time advantage. If you can act ahead of the crowd, you get a superior return during the transition, and then we are all happy with a new equilibrium.

One last lesson on this theme: All of these pieces of paper (options, stocks, bonds) that we consider risky are merely proxies for one underlying financial risk. That is the real investment made by corporations. That is where the risk actually occurs. A corporation commits to a project—the building of a factory, hiring people, etc. The total risk does not change separately from the project. And the total returns do not change; they come from the projects. All that the pieces of paper do is facilitate the allocation of risks and rewards among investors.

That addresses first-order effects. There are plenty of second-order effects. And the more simple we make the system, the less the second-order friction costs are, the more efficient the whole system is.

MR. GEBHARDTSBAUER: One of the reasons that a lot of people think that we ought to argue this out and go slow, and then have a slow transition period is so that it doesn't hit the market too suddenly.

The other possibility is that the rules made it very clear that these should all be in bonds in your DB plans. I'm not sure that employers will stick with their DB plans. They may freeze and go to defined contribution, for which their employers are more likely to come out on top. I don't know what's going to happen.

The other possibility is that if we do this slow-enough transition, the government is going to want to borrow on it someday, even more than it does now. That's why I don't know whether it's going to go up because of these big deficits. Correct me if I'm wrong, but you mentioned that maybe pension plans will not help us.

MR. GOLD: Some think that we should mandate bonds. I would prefer to encourage bonds. The difference between me and those who would mandate bonds comes down to this transition issue. I believe that the markets will accommodate the transition better if bonds are not mandatory.

But the truth of the matter is, the law could be designed to transition to bonds or the markets could do the transition for us. Because the transition may be difficult, I think it is important for us to agree on the end point first.

MR. GEBHARDTSBAUER: So maybe we could include the risk-related premiums, but only on the equities above 70 percent of the plan.

MR. GOLD: There are lots of the ways to design a transition. Because transitions are never pure economics, they tend to include all kinds of compromise. If we want to look for an area where Congress should compromise, it is the transition We should try to bring our best actuarial science to work on the end point.

MR. MARK RULOFF: I agree that going to bonds is the right answer. I'll repeat the comment that actuaries need to learn more about financial economics or at least be able to explain it to their clients. But it is actually a win/win situation. When they go to bonds, there's an issue of where they are going to get these bonds from. And smart bids work. If issuing bonds is cheap for corporations, they're going to start issuing bonds. And they'll be available. I will say that I've learned recently, though, that analysts will not give you credit right away for moving the bonds. You have to prove the match to the figures. So although you can speak of the pension plan, you don't get credit for that right away. Therefore, it would be hard for them to leverage up the corporation by loaning the money and buying back on stock. So there's a timing issue. They want to move the bonds in the pension plan now. But you won't be able to borrow the money, perhaps, until later.

MR. GOLD: I agree. There are several moving parts. We know that credit analysts are focused on cash flow and on the committed bond payments. And so, if you switch a dollar in your pension plan, you will not be able to get a dollar's worth of switch on your balance sheet. Although the credit rating agencies still have a lot to learn about pension plan risks and leverage, they will never allow the full re-leveraging on the balance sheet.

In fact, all of the economic value added, including all of the tax advantages that we talked about, can be achieved by a corporation that never re-leverages. In the aggregate equilibrium, however, we will need re-leveraging because we will need a source of the bonds. Nonetheless, the individual employer can deliver value to its shareholders merely by replacing its pension plan equities with bonds. It does not have to lever, it does not have to take more risk, and it simply can deliver a less-risky return that diversified shareholders will value more highly.

The distinction is between the Fischer Black (1980) approach leveraging the company—versus the Irwin Tepper (1981) approach—where the shareholder does his own leveraging. Both approaches create the value at the moment that the pension plan switches from stocks to bonds. They realize that profit at the corporate level, using the Black transaction, or in the shareholder's pocket, using the Tepper approach. I know that this is a little academic, but the papers are out there. You are going to hear those names Black and Tepper more often. They are important.

FROM THE FLOOR: Has anybody out there seen their clients reduce their equity exposure? Or maybe, just because the equity has gone down, they actually lowered the bar on how much is in equity in the administrative policy?

MR. BUFFIN: Let me just follow up with a question, Mr. Gold, do you see a potential for a large number of shelf registrations to improve the potential supply of bonds to make the supply and demand situation more readily available and to achieve some efficiency in that?

MR. GOLD: When Mr. Buffin says "shelf registration," he is referring to companies that may be willing to issue bonds to meet demand on a somewhat continuous basis. At lunch, he and I talked about the Treasury doing the same kind of thing. An investor could walk into the Treasury and say, "I need \$12 million of the 37-year zero." And the Treasury would issue to meet that demand. Theory says that if your markets were relatively efficient, this approach would lower the Treasury's cost of borrowing.

UNIDENTIFIED SPEAKER: How long does issuing bonds take, otherwise, if nobody is registered now?

MR. BUFFIN: Well, I think that you've got inefficiencies, potentially, in the market. You've got some pricing disequilibrium.

UNIDENTIFIED SPEAKER: If a company, all of a sudden, decided that they wanted to issue a bond and the market was right, how long would it take?

MR. GOLD: It would probably take weeks.

MR. BUFFIN: It's a very short time.

MR. LESLIE LOHMANN: If Mr. Gold's idea comes through, I can see the new industry of all-bond mutual funds arising, and the bragging rights for the lowest return. It will be fascinating. But my question really is for Mr. Gebhardt'sbauer. Why wouldn't the Academy include an effort to pursue the employment exchange that is fairly clearly set out in the prologue of FAS 87? The pilots of US Airways and UAL Corp. thought that they had negotiated an employment exchange. And due to the fact that, counter to the risk theory expressed by Mr. Munzenmaier, you know it is the pilots who have carried the risk on their retirement plan. I would contend that the person who carries the risk deserves the surplus, if there ever were a surplus in a pilot retirement plan and it were terminated. I would say that it belonged to them, no matter how much it was.

The employer is not carrying the risk. I keep harping on this. The only entity also on the hook for the benefits is the PBGC, which does not even come close to guaranteeing the entire benefit for the group, such as the pilots. In fact, I don't think that there's anyone who really gets a full 100 percent return on the PBGC guarantee. So every participant, in fact, is carrying some risk all of the time.

My point is, why can't the employment-exchange principle be emphasized more in what we're doing? And I claim that if, in fact, this person who makes the

employment-exchange promise were responsible for it on a first-dollar insolvency situation, all of these problems that you are talking about would go away. The pilots could negotiate for benefits that suited their needs in retirement, rather than the sort of contingent gratuitous option that I keep harping on.

MR. DAVID GUSTAFSON: I think that the latest study that we did can give you an idea of what percentage of participants get 100 percent of their accrued benefits. It was about 93 percent. That's probably gone down, but that's almost everything that they promised.

MR. BUFFIN: That's people in payment, though, right?

MR. GUSTAFSON: No, that's active.

UNIDENTIFIED SPEAKER: What about pilots, for example? What percentage of theirs?

UNIDENTIFIED SPEAKER: I think that pilots did pretty well on these plans, because assets are first allocated to the retiree benefits

UNIDENTIFIED SPEAKER: U.S. pilots certainly have taken the largest dollar hits of any group of plan participants. But even they have—in the U.S. Airways case, for instance, you have reports of them getting 25 to 30 percent of what was promised. With this asset allocation, they were averaging about 75 to 80 percent of what was promised.

MR. BUFFIN: Do you not think that society, in fact, if it were politically palatable, would benefit (certainly PBGC would benefit) if in an insolvency, the first money out the door goes to promised pay and future pay for employment already performed.

I'm talking about the fact that, right now, a sponsor promises a pension benefit, which, in insolvency, he's not standing behind in any way. In short, his creditors are not standing behind it.

UNIDENTIFIED SPEAKER: We've argued that case on Capitol Hill on a number of occasions. And, interestingly enough, we have several folks on the other side of that issue, including the trade creditors of the bankruptcy cases of the organization and the unions, which are usually more focused on retiree health benefits. In bankruptcy, judiciary committee members say that this isn't what the insurance program is for, to provide for these promises. So we really haven't had a sympathetic ear, if you collateralize it. I think that the banks also are concerned. The PGBC is fighting a lot of different priorities in bankruptcy.

UNIDENTIFIED SPEAKER: If the employer were responsible, I'd claim that the creditors would lead to full funding, generally, because they don't want to lose out in insolvency. And I would like to have a variety of designs that I could use. Right

now, I'm restricted to limits on PBGC guarantees.

UNIDENTIFIED SPEAKER: I think that economists would say that full funding is efficient. But they don't care how you get there. And if you can find a market force that will make full funding the logical outcome, that's almost always superior to a regulatory force getting the same outcome.

FROM THE FLOOR: I want Mr. Munzenmaier to clarify one of his suggestions about the elimination of PBGC. If I understand, you would move what this corporation was backing in pension benefits back to Treasury. How would that prevent moral hazard? Actually Mr. Gold was talking about how weak companies might not fund properly in order to get protection from the government.

MR. MUNZENMAIER: That goes back to the plan of governments. It's one of the tricky issues. Understand the market and the transition of reducing benefits to the levels that current assets can support, by definition. Remember, in that transition, you're going to take all benefits and reduce them to the level that will be supported by the current assets. That's the first decision that they've got to make. And as they go forward, they've got to be sure that they live up to their responsibility of allowing the corporation to group benefits or adopt additional benefits to be supported by the company. People realize that the times have changed from what took place with the airline industry. They hoped that they performed, but had little possibility of doing so.

MR. BUFFIN: With regard to this new science of financial economics, it's really not a new science, but perhaps it's new to you as actuarial practitioners. To what extent has it influenced what you are doing in practice? To what extent have you embraced it? To what extent are you opposing it, perhaps? Let me hear from the practitioners, their view of what financial economics really means.

MR. ROBERT NORTH: I'm the chief actuary for the New York City Office of the Actuary. I've had the opportunity to present seminars to the trustees of my five retirement systems, in which I've introduced these ideas. And the explanation, primarily, that they've heard a lot about is expected cost. They haven't heard as much as me. Maybe I ought to tell them about risks. I've also tried to publish, in the financial statements of the city, market value over market-value ABO ratios on a trend basis. I failed there, because of the unwillingness of the auditors to permit it. But I have succeeded in getting such numbers into the comprehensive annual financial reports of each of the retirement systems. They show that the funded status of the plans, of course, is substantially different than that presented under GASB 25 and 27. And that's, clearly, not as favorable. I think that the extra information is part of moving to a transparent world. And it raises questions.

What I haven't achieved, and is going to be the hardest part, is finding agents that have any interest in taking on an increased burden of cost. Whether it be the employer, the plan-participant representatives, or anyone else, in what are really

jointly administered plans. There are benefits to everyone by saying that everything is cheap in this generation. The first generation that wishes to deal with it is going to take on a real burden. And so, I think that some of the information is getting out there. But the education is proving to be fairly easy. The ability to get any action taken upon it, well, that's another story.

MR. GOLD: We have been underpricing benefits. Which means that employees have had to give up too little in wage concessions while the benefits eventually come to their full value. But we have been pretty good in the public sector at passing that full cost on to our children.

UNIDENTIFIED SPEAKER: You know, maybe it's interesting. Black & Tepper published in '80 and '81, and it didn't make any difference. We ignored them then, and we ignore them now.

UNIDENTIFIED SPEAKER: That's always the reward for creativity. Mr. North's comment about market values in relation to ABO's benefit-security ratio reminds me that I was ignored in 1980 when I wrote a paper for the American Management Association. I came out with numerous definitions of the benefit-security ratios that should be computed and disclosed. At the top of the list was market-to-ABO ratios. It was ignored totally. At least I'm glad that the idea didn't die completely.

FROM THE FLOOR: This is, in a way, more of a comment. Earlier this year, I listened to the webcast about financial economics. I've yet to discuss this with my clients at all. There are certain aspects of it that I think are impressive. But I also think that, before this becomes policy, if we had an opportunity to reset policy, I would want to see this examined more scientifically again, and see some real opposition to it. I know that when I was looking at the presentation, I remember one of your arguments was that it was more efficient for a stockholder to hold the shares directly than to hold them in the pension trust of a company in which they owned shares. And I remember feeling that certain parts of the presentation, as with any attempt to model a complex topic, involved simplifications. I remember feeling a little uncomfortable with one or two of them. Perhaps they were not close enough to correct to be valid. I think that there are some issues. I'm a little uncomfortable, as well, with the whole idea of eliminating or greatly reducing access to part of the investment universe. Because, at least, when we're taught about markets, we're taught that, that's not on the efficient frontier or that if you reduce your frontier, you reduce the range of investment return that you can get. So there are certain aspects of it that make me uncomfortable.

If we were changing things, it seems to me that one of the things that we need to look at is what the history has been. We passed an ERISA law back in the 1970s, which gave companies four decades to pay off initial unfunded liabilities that they had built up to that point. And in the case of some of these industrial companies, I had clients along the way that had very substantial unfunded liabilities built up by the 1970s, when that law went into effect. So you still have about 12 years left on

that 40-year amortization period. Now, of course, some of the things that have happened since that time, for example, the passage of the Omnibus Budget Reconciliation Act (OBRA) and later the passage of the Retirement Pension Act have reduced, in effect. Putting in the current liability rules also has reduced that effect. But it seems to me that even with OBRA, we're still not fully out of that 18-year initial amortization period. It seems to me that we're jumping the gun on this. But maybe what we really need is a more scientific look into the financial economics. For example, we still give companies three decades to pay off any kind of plan amendment. And that three decades to pay off a plan amendment may be fine if you have a financially strong company that's capable of paying it off. If you're dealing with Bethlehem Steel, which hasn't been financially strong since the early 1960s, maybe three decades is inappropriate. Maybe there should be some restrictions, altogether, on whether or not companies like that are allowed to raise benefits. And if so, by how much?

UNIDENTIFIED SPEAKER: I understand that Bethlehem Steel will be fully amortized shortly.

MR. GOLD: The company paid off its unfunded liability. We're all pleased with that kind of progress. With respect to the efficient frontier, I think that I can actually make an effort to clear that up.

Sharpe (1964) was writing about individual investors with risk/reward preferences. You never can do an efficient frontier for a small part of my portfolio. The financial economics view is that the owner of all of the assets in the pension plan (the financial owner; I understand that the legalities are different) is the shareholder. The shareholder diversifies not in the pension plan, but with the pension plan. And just as you would put your bonds in an IRA and hold your S&P index fund in your personal account, so, too, the shareholders want the tax-sheltered plan to hold bonds, and they still can be on the efficient frontier easily.

It's a question of location of equity risk for the person who counts. The person who counts is a human being. Institutions do not hold risk. They only exchange it, swap it, move it around with little pieces of paper. Human beings hold all of the risks every night. They get all of the rewards from those investment risks and the punishments, as well. It is just a question of what the tax laws encourage. You do not put municipal bonds in a pension plan, because you would hold them in your private portfolio. Equities are just an intermediate step between the tax-advantaged municipal bonds and the full taxation on nominal bonds, or corporate bonds.

FROM THE FLOOR: Again, we obviously all hold the risk. I don't think that there's any real question about that. But I think that there's a question as to how society spreads those rewards and risks.

MR. GOLD: If I am a diversified owner of stock in a company, it does not matter

what the company's pension portfolio does in the way of diversification. We are presented with two great opportunities, to manage the risk of the sponsor and to get tax advantages for the owners. That is why it is a win/win.

FROM THE FLOOR: Again, it's an impressive idea and it needs further study.

MR. GOLD: We have had several discussions on the financial economic task force about what research needs to be done. Please let us know what you think needs to be studied.

FROM THE FLOOR: I would love to look back through your paper and some of the material you presented. Then I might be able to add more ideas than I have right now. At this point, I have impressions.

MR. GOLD: I did not mean to put you on the spot. I just thought that you might have had a particular empirical test in mind. Because we on the task force keep hearing a lot about the need for empirical work.

FROM THE FLOOR: There were particular assumptions that you had made. And I was not comfortable with all of them.

MR. RULOFF: I will say that the task force is open to people who don't believe in financial economics. And there are members who feel that the people that have the time to do the research are the same ones who are promoting financial economics. And other practicing actuaries, who don't believe in financial economics, don't necessarily have the time. So I want to say that we are looking for people that don't believe in financial economics to do research. So we would be glad to see them.

Let me try to respond to the risk issue that we just had a conversation about. I don't believe that Mr. Gold is saying that, perhaps for a young person, an 80 percent equity/20 percent bond mix is bad. His arguments are based on tax considerations. He's not saying that they should not move from 80/20 to some other risk/reward scenario. But instead, make sure that they hold the bond piece in their IRA, because they get the largest tax benefits from it.

I do have one small difference between Mr. Gold's comments and presentation and how I feel. I appreciate the fact that you [Mr. Gold] make these arguments on an economic basis. But I didn't actually appreciate the fact that you said that it's not a moral issue. I would say it also could be a moral issue, could it not?

MR. GOLD: It certainly could be a moral issue for many people. For what it's worth, I share the moral judgment as well. We make promises; we ought to keep them. That is sort of a moral judgment. But economics also tells us that it is efficient to spread risk in certain ways. And so, I try to avoid the moral argument.

FROM THE FLOOR: Mr. Gold, what is it about English-speaking people that creates the situation where it makes more sense to have bonds.

MR. GOLD: The reason that I tell you that this is true in the Anglo-Saxon world is, I do not know any place other than the Anglo-Saxon world, and I only speak English. The same tax arbitrage may be available in Japan or Germany. I just do not know. So I am trying to be very narrow, careful and limited in what I say. When I say that bonds, risk and tax considerations are aligned, I want to say that where that is true. Because it is not always, necessarily, true. It is not a law of economics that the tax codes must work this way.

I began to ask myself why we tax stocks and bonds differently. And we do so in two places. The tax treatment to an issuer is asymmetric, and the tax treatment to a holder is asymmetric. How could we get total symmetry? One way is to have the recognized taxable amount each year be the total return on the stock or bond, even from the issuer's point of view. Only in the last few years have we had the computer capability to calculate the total return in the hands of the shareholder and the cost (on a total-return basis) on the books of the issuer.

So we just now have the possibility to get rid of some of these asymmetries. And that is what they are. They are disparities that make the tax arbitrage possible. I do not know a good economic argument for why we tax stocks and bonds differently. It appears that there would be equilibrium if we taxed them identically.

Why do we tax equities more favorably? To encourage more equity in our system. Why? I do not know. Since all of the risk comes from that real project, I do not know why we want more of the pieces of paper that finance real projects to be equities and less to be bonds. Could we not let the markets find their own equilibrium in a tax-neutral (tax-symmetric) environment?

So I am not sure. Maybe the part of the economics literature that I have not read would tell me why we have different rates. But it is those rate differences that cause the Anglo-Saxon tax arbitrage.

FROM THE FLOOR: So maybe our job, now, if we want to make the world a safer place for DB plans, is to go out there and change the tax system, so that stocks and bonds are treated similarly.

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